
Meeting Notes

January 31, 2023

Willow Island Park Enhancements Community Oversight Committee Progress Meeting

January 26, 2023

4:00 pm - 5:45 pm

Contract # C1001636

Prepared by: Jeni Reed/Michele Palmer

Attendees:

Michele Palmer (Whitham Planning & Design, Consultant)

Jacob von Mechow (Whitham Planning & Design, Consultant)

Varick Chittenden

Mike Scriminger

Sean O'Brien

Lance Rudiger

Barb Beekman

Brooke Rouse (zoom)

John Larrance (zoom)

Matthew Mazzotta (zoom)

Leigh Rodriguez (Village Employee)

Jeni Reed (Village Employee)

WPD Presentation Discussion

Schedule and Meetings

- Regularly scheduled meetings are set for the last Thursday of the month (next meeting 2/23/23 at 4 pm).
- Public Information Session will be scheduled for March 2 from 4-7 pm.
 - There will be presentation boards set up so people can drop in and out with no set presentation time; this gives people time to interact at their own pace.
 - Whitham will prepare materials and share them at the February 23rd committee meeting.
 - Will need to determine a good location - perhaps the BOCES building in Canton.
- Proposed Updated Timeline: potential schedule outlined based on the bar chart previously provided.
 - Michele will send a more updated schedule.

- After the public info session, we will confirm the scope of work and will be looking to finish schematics and some budget numbers, along with confirming additional needed funding.

Phasing

It was noted that the project will require phasing:

- Concerns must be balanced with what makes sense from a construction perspective.
- Would be best to have a framework for the public information session - "when is it going to happen?" is a likely question.
- Schematic design to be shared - if the committee approves, WPD can move forward on recommendations for potential phasing.
- Anticipated design phases for the project:
 - May (60% design development)
 - June (90% construction docs)
 - July/August (bidding)
 - Potential Fall construction period – contractors can work as long as weather holds and resume in Spring as needed.

Review of reports from Civil Engineering Team

Environmental Remediation Easement - this is in relation to the original cleanup; the site has been released for restricted residential/active recreational use and should not present any issues for the project.

Ecological Screening - no immediate critical environmental issues

- There are no protected wetlands on the site.
- The report flagged some potential endangered species habitats.
 - These may become relevant if streambank stabilization and erosion mitigation are undertaken. Likely, it will be required for the NYSDEC permitting process.

Floodplain analysis - some potential issues:

- The entire site with the exception of the art park hill is within the 100-year floodplain.
- This creates some limitations, the largest of which is no fill materials of any type can be added to the site per federal regulations.
- Earthmoving can be undertaken if all soil on-site is balanced (must take soil from one place to add to another).
- Pavilion/bathroom is an issue with the floodplain due to FEMA regulations which require any permanent structure to be at least 2 feet above the flood elevation.
 - For this reason, no permanent structures can be installed anywhere on the site without fill or unusual construction methods. Below the art park hill, almost none of the Village portion of the island is above the floodplain.

- Note that the theater of the previously proposed concept from Matthew Mazzotta would still be possible with these limitations as long as it is flush with the ground.
- A 50ft setback from the Grasse River is required per NYSDEC for a permanent bathroom and if a structure were proposed that includes a tank that's storing waste in a semi-permanent situation.

Updated Schematic Plan

Whitham presented a more developed schematic plan that they believe meets the program for the site within the constraints of the site and regulations.

- The tip of the island - stage would be located near this location (Matthew Mazzotta is still developing a concept for this) for the great view and framing by existing trees.
- There will be a pedestrian pathway around the majority of the site, with a portion capable of accommodating a vehicle for set up down to the stage.
- A large gathering space will be located adjacent to the stage with sight lines that extend out up the island.
- Maintenance areas would work outward, with more maintenance required toward the middle of the island out to a more densely forested edge which would require little to no maintenance and limit goose access to the island.
- Parking area - has not moved from its current location, but it is configured more efficiently, reducing its size while increasing the number of spaces by two, including two or four ADA accessible spaces (qty of ADA spaced TBD).
- Playground area - tucked in the corner on the slope, providing an opportunity to use the topography of the slope on the island. However, this would put the playground outside the Village property line, so a maintenance and use agreement would be required with GRH.
 - Playground would be proposed with one main structure, several slides built into the natural slope, and a couple of balance beams and climbing features.
- A consolidated picnic lawn is proposed off the parking lot which would simplify maintenance.
- A walkway is proposed through the art park which weaves through the art and connects to the pedestrian path.
 - The steep hillside section of walkway may not need to be fully ADA compliant (due to recreational nature) but can be a barrier free route which may provide better access & include a handrail.
- The restroom is proposed close to the parking and picnic area for easy access. Note that this is located on Grasse River Heritage's property, which may require an agreement.
- Lighting & electrical service - WDP suggested abandoning most of the overhead power and taking it underground to avoid concerns with ice damage & aesthetics. The project could utilize some lighting on existing poles, with limited lighting or mounting on trees for the lower end of the island for lower cost and lower impact.

Committee Reactions:

- Questions were posed regarding parking - it was determined that for an event most parking would happen off-site in municipal parking nearby, saving the parking lot for accessibility issues.
- Something to consider - put in something to discourage parking along the access road.
- It will be important to identify parking options and to have them ready to present at the public information session to answer people's concerns.
- It was confirmed that due to the floodplain any permanent structures would need some elevation which is difficult. Building on stilts would be theoretically possible.
- For the sidewalks, we would have to take away earth to put in the gravel or asphalt with amounts of earth moved calculated. Another theoretical possibility would be to construct a boardwalk.
- Maintenance issues for gravel vs. asphalt were addressed.
- The proposals for a performance structure or stage were discussed. There were some concerns regarding a stage that is flush with the ground. It is possible to raise it up slightly if earth were removed from somewhere else on the island. Possibilities for a temporarily raised stage that could be brought in as needed were discussed, as well as temporary bleachers for audiences as long as anything can be removed before flooding.
- It was discussed that although flooding and ice pose an issue, it is important to remember that the site is still usable for several months of the year; the plan just needs to be well thought out.
- Performances are not going to happen every day, so it was noted that the plan is good for keeping regular daily use close to the road. Committee members could see themselves using this area often with friends/families, and the proximity to downtown will be good for local businesses while providing a nice complement to heritage park on a daily basis.
- Some discussion was held regarding how large the "stage" area would be. The design team would appreciate some feedback on this. Their placeholder is about 35 feet across at this time; the smallest it should be is about 30 x 30 feet. It would be possible to create a small stage area as proposed by Matthew Mazzotta, which could be covered by a larger portable stage as needed.
- One proposal involved the potential for leveling on the island to accommodate a skating rink or even digging down on the walkway to create a skating path (as long as drainage issues are appropriately addressed).
- Liability issues for the playground were discussed, as the owner of that portion of the site (Grasse River Heritage) would be concerned about this:
- As it would be a public playground on a not-for-profit property, a formal agreement with the Village to cover maintenance, usage, and liability would be recommended.
- Research from Engineers on Toilet Facilities provided.

Toilet Facility Options

Per Stall Estimates Costs

- \$100k/stall for a containment tank, waste to be hauled
- \$120k/stall for a grinding/pumping option with connection to municipal sewer
- \$30k/stall for composting + \$1k servicing costs
 - Rated for 60 uses per day at over 65 degrees
 - These appear to be better for trails under less frequent use
- \$38k/stall for trailer w/lower maintenance costs

Without extraordinary construction methods, a permanent structure would need to be located within the art park area due to flooding and regulations.

Something on raised stilts is possible, but would likely be cost-prohibitive, plus ice damage would be problematic.

For a trailer option, a concrete pad would be installed for placement.

The concept suggested keeping the restroom close to "active" side of the island due to distance, maintenance, and aesthetic concerns and close to the playground.

- One committee member's suggestion also included putting the bathroom up at the top by the turn on the corner to avoid having to pump waste up the island.

Next Steps

- In order to maintain the current timeline, the design team would like approval on their proposed layout (with any tweaks) within the next week or so.
- It is the intent that the project will be completed in phases, as funding will likely not cover the full design. The team will suggest phasing options.
- An opinion of probable cost will be developed for each program element once a layout is approved.
- Priorities will need to be identified based on the most desired coupled with what makes sense from a construction standpoint.
- Whitham will send the schematic design plan plus the bathroom cost analysis to the committee shortly. (Sent post-meeting)
- Next Meeting Scheduling:
 - February 23, 2023 at 4 pm - Committee Meeting
 - March 2, 2023 from 4-7 pm - Public Information Session

Action Items

- Michele will send a more updated schedule.
- Formalize arrangement with Matthew Mazzota and plan to keep him involved. (Village)
- Arrange a public informational meeting for schematic design in March. (WPD & Village)



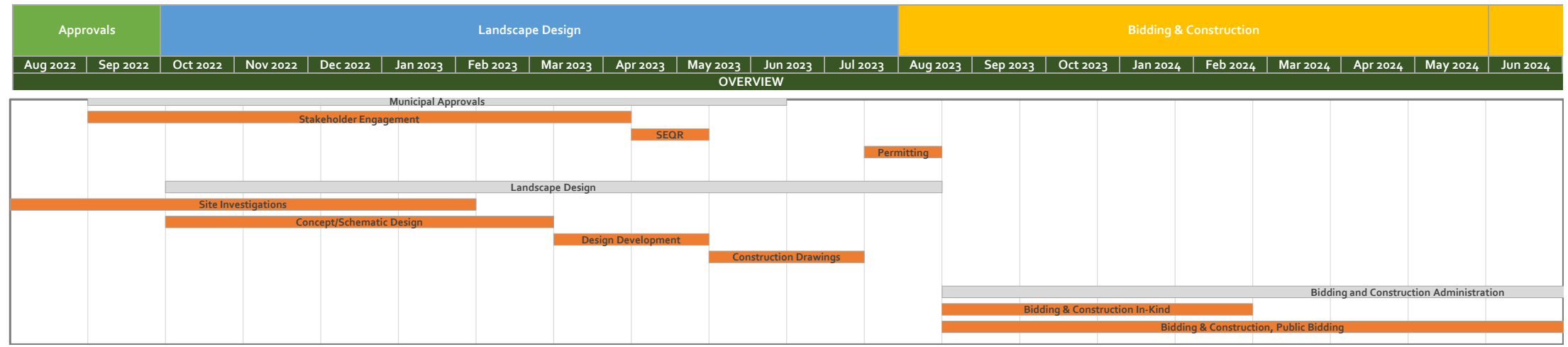
- Prepare visuals and information for public outreach meeting. (WPD)
- Documentation of ice in spring melt? (Village)

Landscape Architecture Schedule

VILLAGE OF CANTON
 WILLOW ISLAND PARK
 1-Feb-23



TASK	START (month)	DURATION (in months)
Municipal Approvals	2	9
Stakeholder Engagement	2	7
SEQR	9	1
Permitting	12	1
Landscape Design	3	10
Site Investigations	1	6
Concept/Schematic Design	3	5
Design Development	8	2
Construction Drawings	10	2
Bidding and Construction Administration	13	12
Bidding & Construction In-Kind	13	4
Bidding & Construction, Public Bidding	13	8
Project Close Out	24	1



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WHITHAM PLANNING DESIGN LANDSCAPE ARCHITECTURE, PLLC

DATE	REVISION	BY

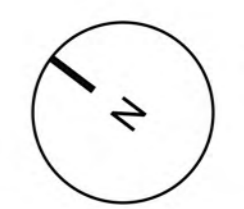
WILLOW ISLAND
VILLAGE OF CANTON
MAIN STREET
CANTON, NEW YORK, 13617

COLOR SCHEMATIC PLAN

1"=25'
SCALE

202214 PROJECT NO.	JVM DRAWN BY
2023.01.25 DATE	MP CHECKED BY

L-000





Village of Canton Willow Island Park - Restroom Alternatives

Traditional Permanent Bathroom Structure with 1,000 Gallon Holding Tank and High Level Alarm and Cellular Alarm Notification.

340 sf wood frame structure with 2 ADA unisex restrooms and janitor's closet (340 sf @ \$588/sf)
1" HDPE water service 6-ft. deep (150-ft. @ \$30/ft.)

Building Cost:	\$200,000
Tank (installed) Cost:	\$6,000
1" water service Cost:	\$4,500
Annual Maintenance Cost:	\$350 per pump out by septic hauler \$600 cell service (est. \$50/mo. @ 12 months)

Traditional Permanent Bathroom Structure with Duplex Grinder Pump Station and Force Main Connection to Municipal Sewer

Building Cost:	\$200,000
Pump Station with force main:	\$35,000
1" water service Cost:	\$4,500
Annual Maintenance Cost:	\$1,000 - includes electricity for pumps and annualized pump repair/replacement costs

Permanent Composting Toilet(s) - ADA compliant, NSF Standard 41 compliant

Purchase Cost:	\$30,000 per stall
Transport and Installation cost:	\$8,000
Annual Maintenance Cost:	3 trips* per year at \$350/trip = \$1,050 * For maintenance by manufacturer. May be less if performed by Village

Trailer Bathroom - 3-Stalls total; 1 ADA compliant Unisex Stall plus 1 men's & 1 women's stalls

Purchase Cost:	\$85,000
Transport and Installation cost:	\$5,000
1" water service Cost:	\$4,500
Annual Maintenance Cost:	\$200/pump out by septic hauler (tank is 300-gal.)

Notes:

1. Construction and installation costs include a 4-foot wide concrete sidewalk all around.
2. Annual Maintenance Costs do not include routine cleaning of the restrooms or power and heat.
3. Composting toilets are rated for 60 uses per day at temperatures > 65° F.
4. Trailer bathroom use limited by holding tank size (300-gal.)



Model M54W Specification Sheet

NSF Certification

The Clivus Model M54W is certified by the National Sanitation Foundation under Standard 41 (day-use, park).

Capacity

M54W VOLUME

Solids storage capacity: 81 cubic feet; 604 US gallons

Liquid storage capacity: 40 cubic feet; 300 US gallons

Daily capacity at average temp. >65°F: 60 visits

Annual capacity at average temp. >65°F: 22,000 visits

Specifications and Materials

DIMENSIONS

Pre-fabricated Shipping Dimensions (2 pcs):

Base: Length: 118"; Width: 65"; Height: 48"

Building: Length: 122"; Width: 85.5"; Height: 114"

Kit Shipping Dimensions:

Length: 240" (20'); Width: 85.5"; Height: 72"

Pre-fabricated Shipping Weight:

Base: 1,000 lbs, Building: 1,400 lbs

Kit Shipping Weight: 2,400 lbs

Assembled Building Dimensions:

Outside Length: 122"; Width: 66"; Height: 114"

Building Enclosure (inside)

Inside Length: 82"; Inside Width: 61"

Composter Base

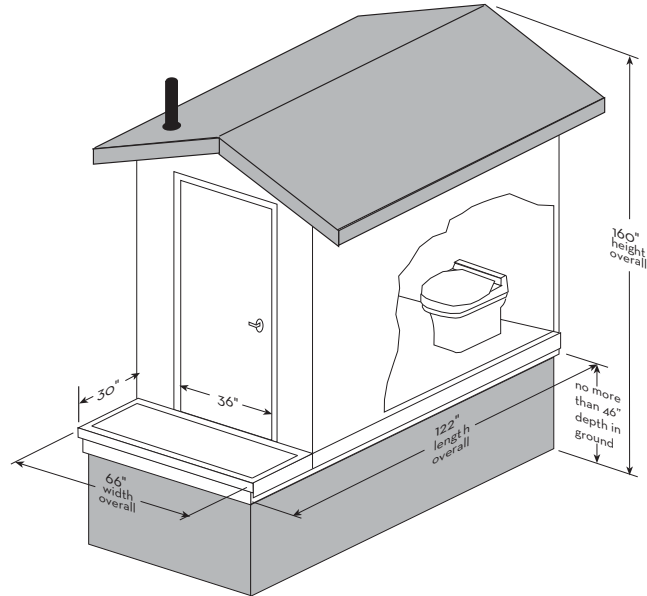
Length: 118"; Width: 65"; Height: 48"

MATERIALS

Composter Base

Composter Base is rotationally molded high-density linear polyethylene resin that conforms with the following specifications:

- Density (ASTM TEST 4883): 0.942 g/cm³
- Tensile Strength at Yield (ASTM D638): 2,950 psi
- Dart Impact (-40°C, 250 mils thickness): 108 ft-lbs
- Env. Stress Crack Resistance, 100% Igepal (D1693): 550 hrs



Building

Building walls are six structural insulated panels (SIP) with expanded polystyrene core with fiberglass reinforced plastic over OSB interior finish and OSB exterior surface finished with 1" rough-sawn pine board-and-batten (other exterior finishes optional). Door is 24 gauge cold rolled steel with zinc coating, factory painted medium gloss white, foamed-in-place polyurethane core; steel hinges; adjustable strike; frame milled from 5/4 kiln-dried pine; door opening: 36" x 80". Fixed window is 36" x 24" frosted lexan. Standard exterior is board and batten.

Roof is two structural insulated panels (SIP) of 4" virgin expanded polystyrene faced with white fiberglass reinforced panels inside and OSB plywood outside for application of asphalt shingles or other finish.

Floor is expanded polystyrene core with 7/16" plywood underside with painted .016 aluminum skin and 7/16" plywood top surface with .08" non-skid rubber coating surface.

Standard package ships pre-fabricated. Kit form is an option.

VENTILATION

DC: 12V fan. Maximum free air is 100 cfm. Power input is 5 watts. CSA & UL approved. DC fan is powered by an optional photo-voltaic system customized for location and site requirements. Call for quotation. AC fan also available.

TOILET OPTIONS

Waterless Toilet

Constructed of impact resistant fiberglass with sanitary white finish. Seat and lid are made of plastic; the liner is rotationally molded polyethylene. The toilet must be located directly over the composter, which is situated in a space or room below. The toilet is connected with a 14" diameter straight chute.

Toilet Height: Standard: 14"; ADA Compliant: 18". Width: 18.5"; Length: 24.25".

Foam-flush Toilet

The Foam-flush toilet is constructed of vitreous ceramic. The seat and lid are made of plastic. The toilet connects to the composting unit with a 4" plastic pipe. The drain may slope up to 45 degrees from vertical. A water connection and a power connection (AC) are required.

Toilet height: Standard: 16"; ADA compliant: 17.5". Width: 15"; Length: 29".

ADA COMPLIANT

The M54W Trailhead conforms to the requirements for universal access of the Americans with Disabilities Act.



Model M54 Double Specification Sheet

NSF Certification

The Clivus Model M54 is certified by the National Sanitation Foundation under Standard 41 (day-use, park).

Capacity

The M54 Double is comprised of two M54 Composters set side by side.

VOLUME FOR EACH M54:

Solids storage capacity: 81 cubic feet; 604 US gallons

Liquid storage capacity: 40 cubic feet; 300 US gallons

Daily capacity at average temp. >65°F: 60 visits

Annual capacity at average temp. >65°F: 22,000 visits. Total annual capacity for M54 Double: 44,000 visits

Specifications and Materials

DIMENSIONS

Kit Shipping Dimensions: Length: 122"; Width: 85.5"; Height: 114"

Pre-fabricated Shipping Dimensions (2 pcs):

Base: Length: 118"; Width: 65"; Height: 48"

Building: Length: 122"; Width: 85.5"; Height: 114"

Shipping Weight: 4,800 lbs (ships in several pieces; maximum weight of any piece is 2,400 pounds)

Assembled Building Dimensions:

Outside Length: 118"; Width: 132"; Height: 110"

Building Enclosure (inside)

Inside Length: 84"; Inside Width: 61.5"

Composter Base

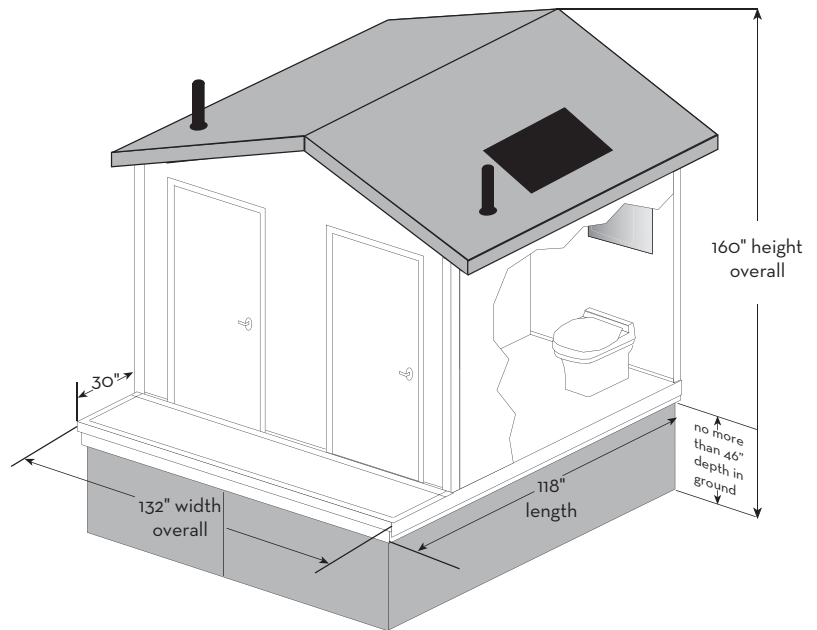
Length: 118"; Width: 65"; Height: 48"

MATERIALS

Composter Base

Composter Base is rotationally molded high-density linear polyethylene resin that conforms with the following specifications:

- Density (ASTM TEST 4883): 0.942 g/cm³
- Tensile Strength at Yield (ASTM D638): 2.950 psi
- Dart Impact (-40°C, 250 mils thickness): 108 ft-lbs
- Env. Stress Crack Resistance, 100% Igepal (D1693): 550 hrs



Building

Building walls are eight structural insulated panels (SIP) with expanded polystyrene core with fiberglass reinforced plastic over OSB interior finish and OSB exterior surface finished with 1" rough-sawn pine board-and-batten (other exterior finishes optional). Doors are 24 gauge cold rolled steel with zinc coating, factory painted medium gloss white, foamed-in-place polyurethane core; steel hinges; adjustable strike; frame milled from 5/4 kiln-dried pine; door opening: 36" x 80". Fixed window is 36" x 24" frosted lexan. Standard exterior is board and batten and custom painted.

Roof is two structural insulated panels (SIP) of 4" virgin expanded polystyrene faced with white fiberglass reinforced panels inside and OSB plywood outside for application of asphalt shingles or other finish.

Floor is expanded polystyrene core with 7/16" plywood underside with painted .016 aluminum skin and 7/16" plywood top surface with .08" non-skid rubber coating surface.

Standard package ships as a kit. Pre-fabrication is an option.

VENTILATION

DC: 12V fan. Maximum free air is 100 cfm. Power input is 5 watts. CSA & UL approved. DC fan is powered by an optional photo-voltaic system customized for location and site requirements. Call for quotation. AC fan also available.

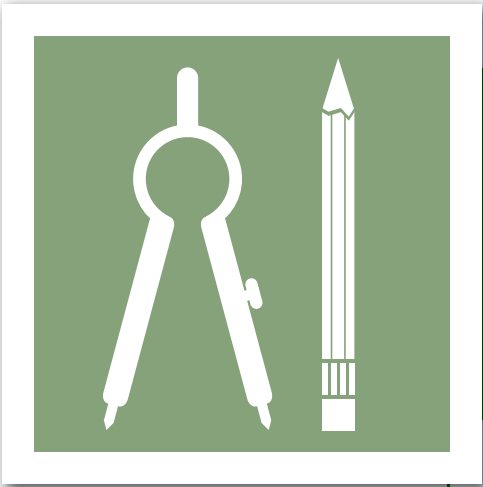
TOILETS

Waterless toilets constructed of impact resistant fiberglass with sanitary white finish. Seat and lid are made of plastic; the liner is rotationally molded polyethylene. Grab bars and toilet paper holder included.

Toilet Height: 18"; Width: 18.5"; Length: 24.25"

ADA COMPLIANT

The M54 Trailhead conforms to the requirements for universal access of the Americans with Disabilities Act .



M54 Series

Planning Manual

.....
Clivus Multrum, Inc.
15 Union Street
Lawrence, MA 01840
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800.425.4887
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Introduction

Overview

For more than fifty years, Clivus Multrum composting toilet systems have been used in homes, parks and commercial buildings as the sole method of treating toilet waste. The composting process is reliable, convenient and safe. Its results are both conservative and productive: water is saved from use as a carriage medium and the fertilizer content in excreta is made available for re-use.

The following pages outline planning for the installation of the M54 composter and building system. Although all general considerations are discussed in this manual, we recommend that you contact your Clivus representative to ensure that the particular characteristics of your design properly accommodate the Clivus system.

Process Description

The Clivus composter uses natural biological decomposition to convert human wastes into reusable end-products. The composter is the containment vessel for a living ecosystem: a forest floor in a polyethylene tank.

This ecosystem needs nitrogen, carbon and oxygen to thrive. The mixture of toilet waste (nitrogen) and bulking material (carbon), exposed to a constant flow of air (oxygen), allows bacteria and other beneficial organisms to convert the organic material to safe, usable compost and liquid fertilizer. Nature's way.

The compost end-product is rich in organic matter, with a bacterial composition similar to top soil. The liquid end-product (which begins as urine) becomes a concentrated fertilizer rich in plant nutrients after passing through the compost layers. The system releases two gases, carbon dioxide and water vapor, the same gases humans exhale.

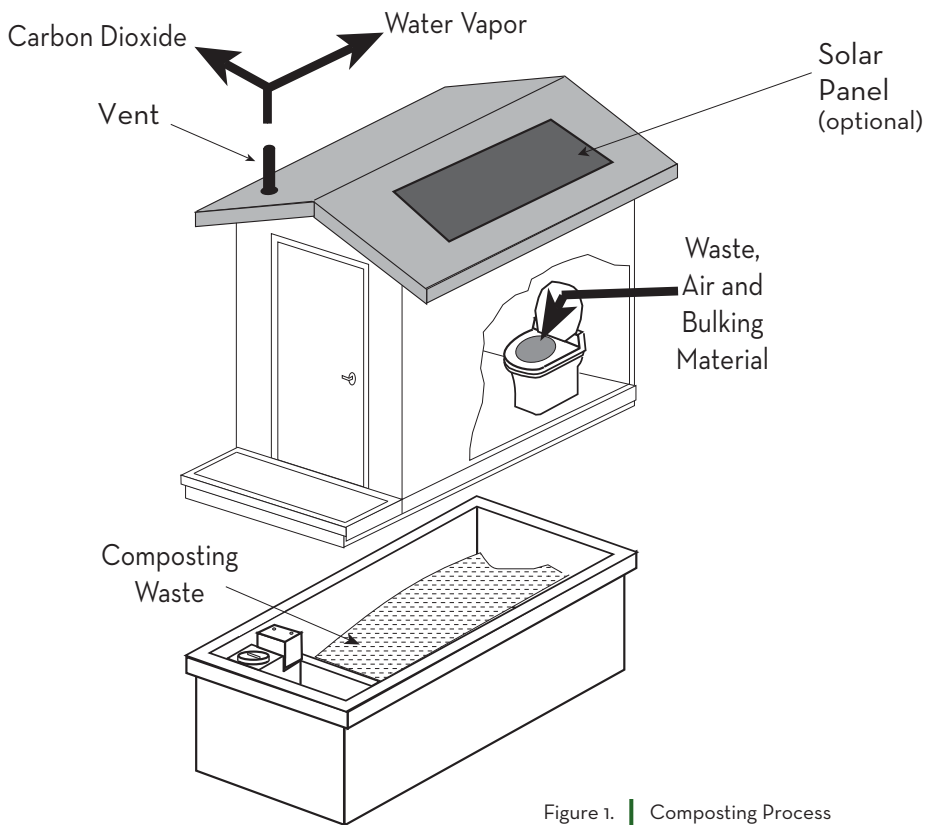


Figure 1. | Composting Process

System Dimensions

M54W Trailhead

Assembled Building Dimensions:

Outside Length: 93"; Width: 72"; Height: 112"

Building Enclosure (inside)

Inside Length: 82"; Inside Width: 60"

Composter Base

Length: 118"; Width: 65"; Height: 48"

Figure 5. | M54W Floor View

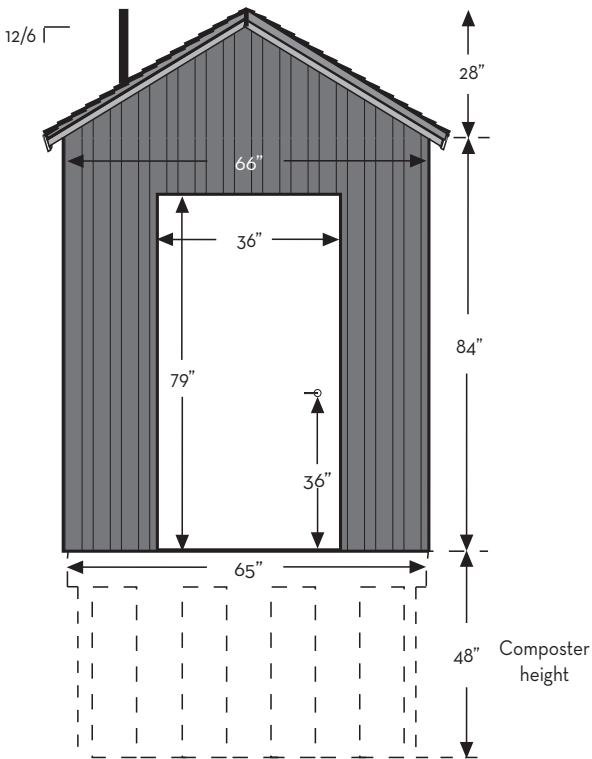
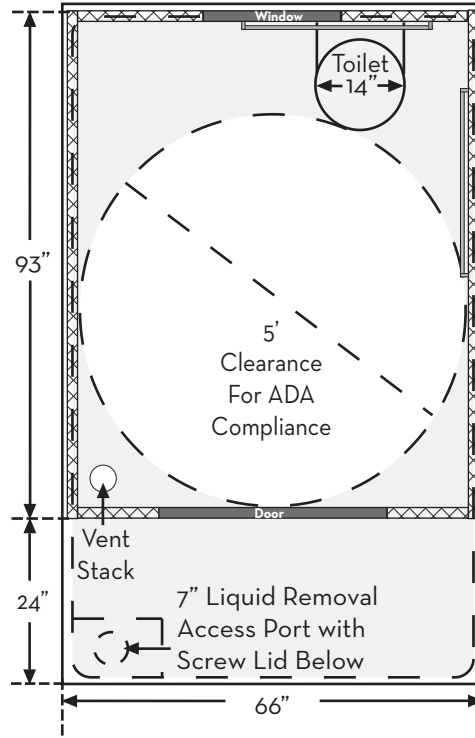


Figure 6. | M54W Front View

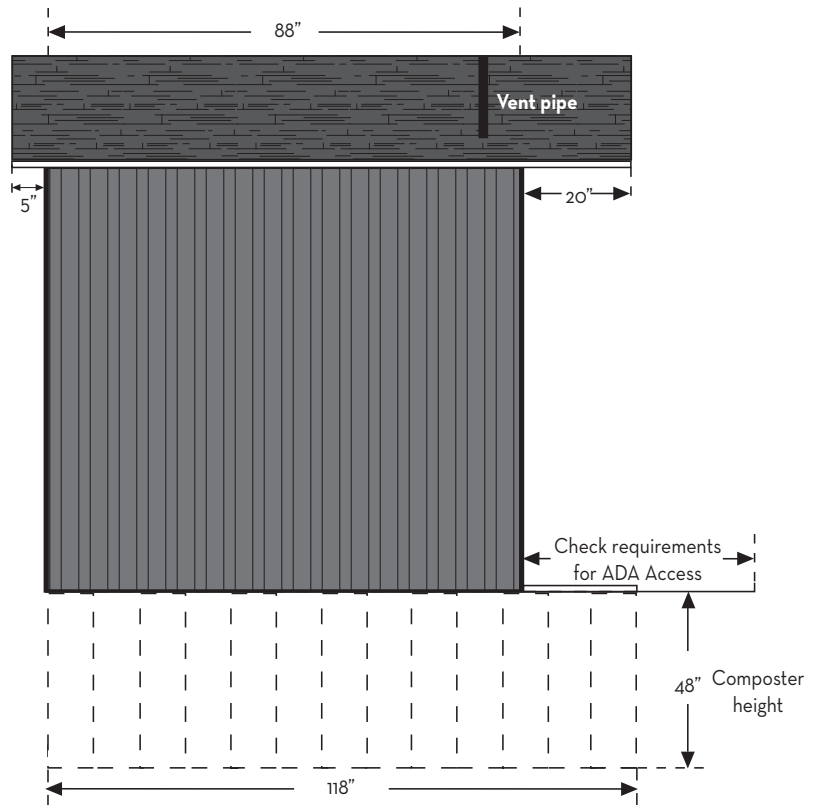


Figure 7. | M54W Side View

System Dimensions (continued)

M54W Double Trailhead

Assembled Building Dimensions:

Outside Length: 93"; Width: 130"; Height: 110"

Building Enclosure (inside)

Inside Length: 82"; Inside Width: 60"

Composter Base

Length: 118"; Width: 65"; Height: 48"

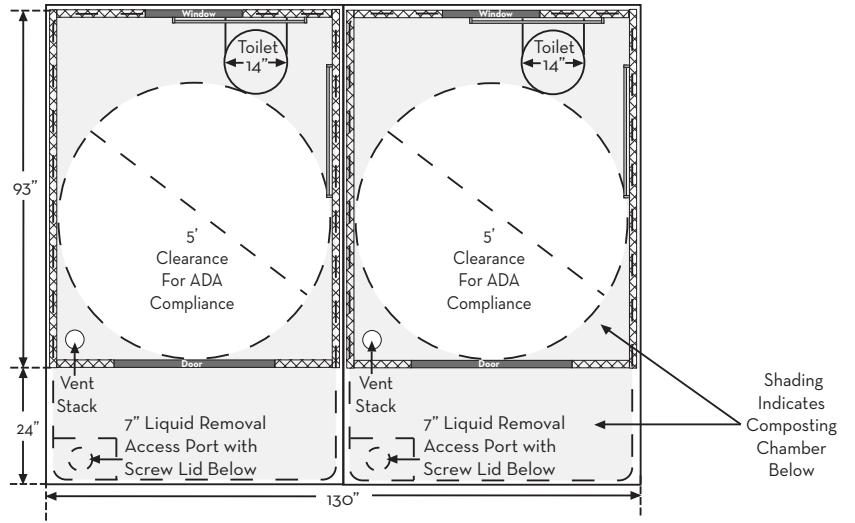


Figure 8. | M54W Double Floor View

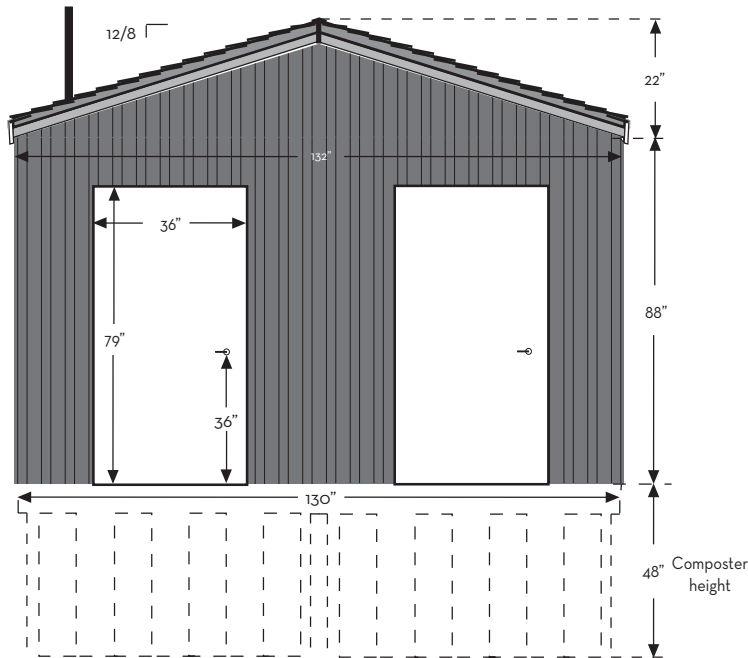


Figure 9. | M54W Double Front View

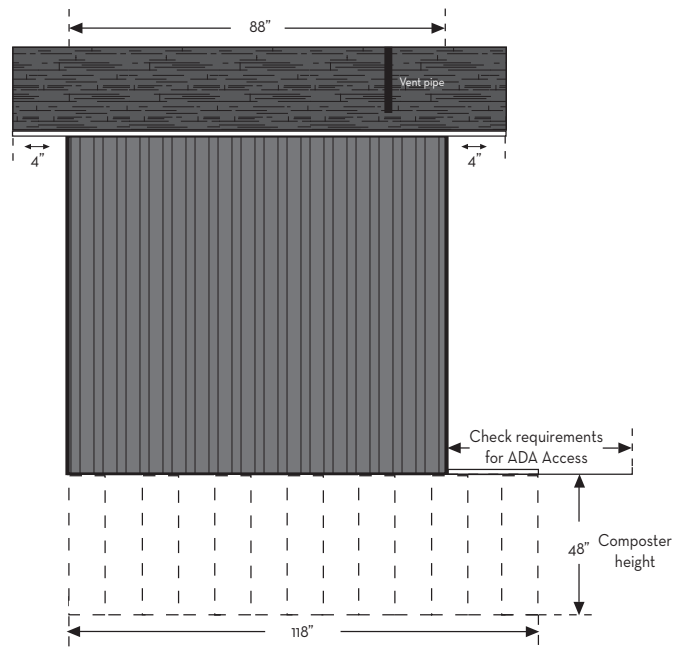


Figure 10. | M54W Double Side View

Planning & Design

Note: Please refer to the M54 Project Checklist in the Appendix (p. 13), which describes the information that must be collected during the planning phase.

Composter Capacity

Projected Usage

To estimate usage, follow these guidelines:

- Obtain visitation records (e.g. admission ticket sales, etc.) for the area that the toilet facility will serve. This is the most reliable method for estimating how many uses the restroom may have to accommodate.
- If records are not available, estimate visitation based upon information such as number of parking spaces, number of bus-loads, foot traffic, etc.
- Estimate the weekday, weekend and peak attendance levels using Figure 11 as a guide. Account for seasonal variations, holidays, periods of closure, etc. and for duplication of peak days vs. weekday or weekend. This is the estimated number of visitors annually.
- Estimate the average length of stay at the site.
- Calculate the annual number of uses of the restroom facility based on an average of three uses per person per eight hour stay or five per 24 hour period.

The Model M54 and M54W composters are rated for an average of 60 uses per day or 22,000 uses annually. The M54 Double is comprised of two separate composters linked together, with an estimated capacity of 120 uses per day and 44,000 uses annually.

Ambient Temperature

The composter usage rating is based on an ambient temperature around the tank of at least 65°F. Higher temperatures will accelerate decomposition. If the composter is to be subjected to temperatures below 65°F on more than an occasional basis, the decomposition rate will slow or cease until the temperature rises again.

In many instances, several compost tanks will be required to accommodate total expected usage. It is recommended that at least 50% additional capacity be allowed beyond the rated use level to account for inaccuracies in the estimation of overall facility use. Also to be considered is whether the facility will experience a growth in visitation in the foreseeable future.

Liquid Storage

The Clivus system generates a liquid as well as a dry end-product. The M54 composter has an integral 300 gallon liquid storage capacity. This volume represents approximately 6,000 uses, or 100 days of use at 60 uses per day.

Site Requirements

Placement

The M54 system is comprised of a compost tank and an integrated structure that uses the compost tank for support. The compost tank can be placed on grade, or buried to within 4 inches of the floor surface. When placed in-ground, it is imperative that the site chosen be well drained and not subject to flooding or a high water table. The M54 composter typically comes with an anchor system that is associated with wind loading. This system should not be confused with an anchor against flotation. It is strongly recommend that a drain-to-daylight be used to avoid flotation. A sloping site is the easiest condition in which to create such a drain. Attempting to tie the composting unit to a concrete pad may result in distortion or tearing of the plastic tank.

When the unit is to be placed on grade, anchoring devices must be used to meet wind loading. Helical anchors are suitable for this purpose. Berming up to within 4 inches of the floor surface or fencing around the compost tank may be done to improve appearance and reduce possible vandalism.

Access

Positioning of the composter base must take into consideration ramping for wheelchair accessibility. **The maximum depth of bury of the compost tank leaves the floor surface 4" above grade.** Plan for grading up to the floor level at the front of the unit for ADA requirement. Any permanent ramp built up to the door must allow the maintenance hatch to remain operable. Any ramp should be sloped away from the front of the unit to avoid water intrusion.

	Attendance Level	X	Number of Days	=	Annual Total
Weekday	_____		_____		_____
Weekend	_____		_____		_____
Peak Days	_____		_____		_____
Total Number of Visitors to the Site in One Year					_____

Figure 11. | Calculating Usage

Planning & Design (continued)

Composter Requirements Fixtures

Liquid End-Product

The liquid end-product that results from the composting process is stable, odorless and can be stored indefinitely by the time it reaches the collection area. In temperate climates, the liquid will accumulate at the rate of approximately one gallon per 20 uses, allowing 6000 uses between emptying the reservoir. This liquid has a useful nutrient content and should, where allowed, be used on ornamental plantings, trees, shrubs and lawns. Consult local codes and regulations for allowable disposition of this material.

An AC or DC submersible pump may be used to empty the liquid storage reservoir as necessary.

Waterless & Foam-flush Toilets

The waterless toilet fixture is sized to create an ADA-compliant interior. The waterless toilet fixture has a 14" opening for waste to enter the compost tank. The waterless toilet is the standard fixture with the M54 system.

With its 4" drain and ceramic construction, the Foam-flush toilet fixture offers a look and feel of a flush toilet, but uses only 3 oz. of water per flush. Since it requires water, there must be a pressurized water line nearby. This may be non-potable water.

The Foam-flush toilet requires a custom building design to be ADA-compliant. Consult Clivus.

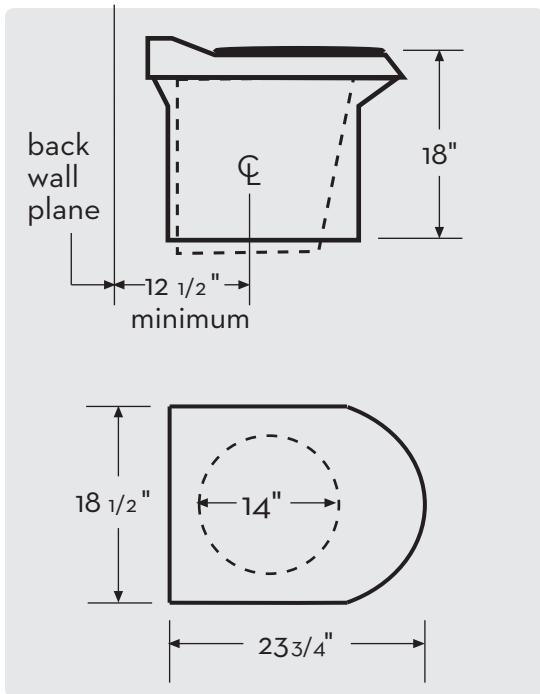


Figure 12. | Waterless Toilet

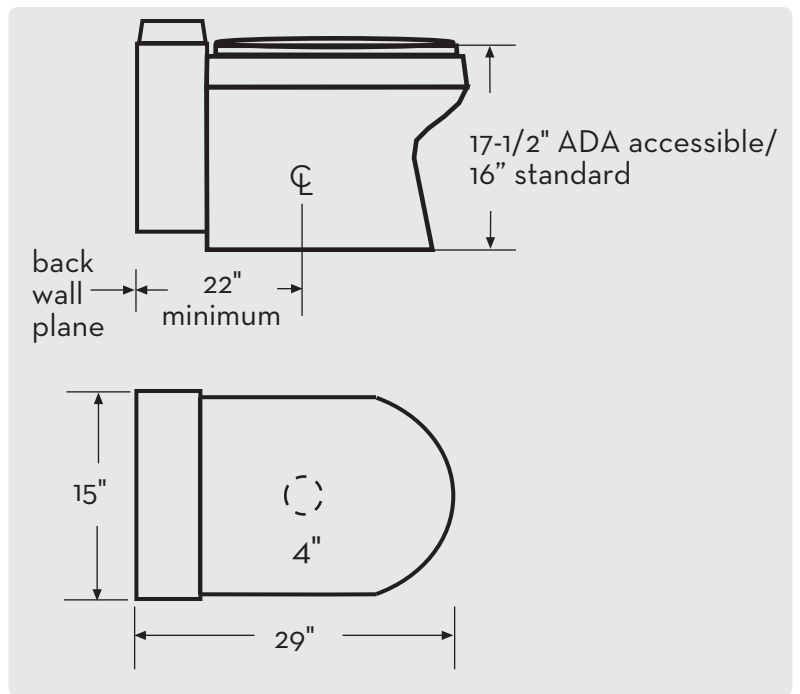


Figure 13. | Foam-flush Toilet

Planning & Design (continued)

Waterless Urinals

The optional waterless urinal utilizes a 2" PVC connection to the composter with NO TRAP. The urinal is vented through the composter by the ventilation fan.

The urinal weighs 24 pounds and is suitable for the M54W and M54 Double.

The urinal is mounted on the rear wall for ADA-compliance.

Electricity

Ventilation

The ventilation system is designed to oxygenate the compost pile and to keep the toilet room odor free. Air is drawn down the toilet opening, carrying away odor, carbon dioxide and water vapor. Each system comes with its own AC or DC fan which will carry out the function of a conventional bathroom exhaust fan. The AC fan is 115 volts, 20 watts; the DC fan is 12 volts and uses .8 amps per hour. There must be no other exhaust fan or other competing air flow.

Clivus provides custom solar systems for DC fan operation. The solar systems are designed to run the fan either 24 hrs/day (for facilities open day and night, such as camps) or during daylight hours only (for facilities open daytime only). Lights for night time use are available.

Solar Exposure

In the northern hemisphere, one face of the M54 roof must face south and be open to a 120° arc of sunlight to maximize collection when roof-mounted solar panels are used. This may mean trimming branches or trees to allow greater exposure. Pole-mounting of solar panels may be required to raise them above the tree canopy.

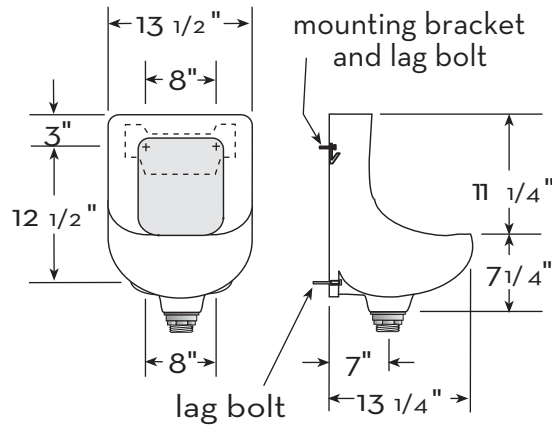


Figure 14. China Model

Maintenance

Clivus offers a variety of maintenance plans. Contact your Clivus representative for information.

Regular

Regular maintenance consists of the addition of bulking material to the compost chamber, compost pile raking and moistening. See the M54 Maintenance Manual for more detailed information.

Periodic

Periodic maintenance includes cleaning the fan and the occasional removal of liquid end-product and solid compost.

Offloading

Packaging

The M54 comes with small components and fixtures nested inside the composter base. The floor, wall panels and roof are stacked on top of the base and the entire package is banded and shrink-wrapped. Shipping dimensions:

M54W: 118"L X 84"W X 92"H; 2,400 pounds

M54 Double: ships in several pieces; maximum weight of any piece is 2,400 pounds

Equipment

Note: The M54 system is a large and heavy shipment. Plan off-loading carefully. If a loading dock is available, a pallet jack can be used to slide the unit off the truck trailer. In situations where there is no dock, or the platform is significantly lower than the trailer bed, a fork lift with extra-long tines, a backhoe, or some other lifting device will be needed to remove the unit from the trailer. Access to the M54 in the trailer is only to its width, so fork lift blades will have to be at least 5' to reach the center of gravity. Several people should be present to assist in offloading.

The unit may be unpacked for transport to a remote site. The largest single-piece dimensions and weights are shown below.

M54W:

Base: 118"L X 66"W X 48"H; 600 pounds

M54 Double:

Floor: 130" L X 117" W X 2" H; 300 lbs

Planning & Design (continued)

Building Structure

There are two styles of structure with the M54 composter. Please refer to the M54W and M54 Double specification sheets. The exterior of the M54 can be customized. The M54 is also available as a prefabricated structure. Please contact your Clivus representative to discuss custom finishes and prefabrication requirements.

Engineering

The M54 system may need to be custom engineered for wind-loading. The wind-loading for the standard M54 system is 110 mph. Check your local wind-loading and contact Clivus if special engineering is required.

Appendix - M54 Project Checklist

Type of Facility (check one):

- Park
 Boat Ramp
 Golf Course
 Nature Center
 Commercial
 Other

(Please describe: _____)

Usage Estimates:

Average Daily _____

Average Monthly _____

Average Yearly _____

Type of Operation (check one):

- Day-time use only
 Both day and night use

Electricity:

AC power available? yes no

Do you prefer a solar system?

yes no

If yes, does a slope of the gable roof face south? yes no

(Note: for solar systems, it is recommended that 120 degrees of the available 180 degrees of the horizon be free of obstruction for maximum energy capture.)

Water:

Is a pressurized water line available at the site? yes no

Site Accessibility:

How far is the installation site from the nearest road? _____

Is the road to the site paved?

yes no

Can a 53' tractor/trailer navigate the road? yes no

What is the lowest height obstruction on the road? _____ feet _____ inches

Preparation for Shipment Arrival:

The single-stall M54W ships as a single package. It is approximately 10' x 6' x 7' (height) and weighs 2400 lbs. Access is limited to the 6' dimension on the tractor/trailer. If a fork truck is to be used to off-load, it will have to have extended forks. Keep in mind that the package may be at the head of the tractor/trailer and may need to be pulled to the end of the tractor/trailer in order to use a lifting tool. It is also possible to unband the package and off-load in pieces. In this case, the heaviest piece is the compost tank (60" x 117" x 48" tall, weight 600 lbs.). A ramp of 2x6's can be created to slide the tank off the back of the tractor/trailer. The M54 Double ships in four packages: two compost tanks, floor, two roof panels (banded together). Several people are recommended to unload the floor and roof panels.

Drainage Beneath Compost Tank:

M54 compost tanks are not designed for use in sites known to be subject to high ground water, extreme run off, or riparian flooding conditions. The anchors provided are for wind loading and are not insurance against occasional wet years or unusual temporary conditions when ground water may be elevated for a short period of time.

Clivus recommends placing the M54 in an elevated site, where a drain-to-daylight is possible. Clivus recommends a sandy backfill if the native soil is expansive. The M54 compost tank must not be subject to upward pressure from water sources such as ground water or run-off. The M54 should not be put directly into expansive soils, such as clay, which would, when wet, exert inward pressure on the tank. **Clivus is not responsible for lifting or compression of the M54 composter due to poor site selection.**

Consider a soils report. Rather than fixing drainage or tank movement problems after the M54 is installed, a better method is to get a soils report from a qualified geotechnical engineer. An engineer's report based on test borings or pits can detect problems like sub-surface water, uncompacted fill, and poorly draining soils before excavation.

Statement of Agreement:

I agree that the above is true and accurate and that I understand the information presented. I understand that Clivus Multrum, Inc. may make product recommendations based on the information in this agreement. I agree not to hold Clivus Multrum, Inc. liable for any issues or problems relating to the above that may arise after the M54 series composter is installed.

Signature _____ Role _____ Date _____

LANG SPECIALTY TRAILERS

106 Turnberry Circle
Latrobe, PA 15650

Phone # 724-972-6590

www.langrestroomtrailers.com

QUOTE

Date	QUOTE #
1/12/2023	6299

Name / Address
Shumaker Engineering Bill Lane

***** FOB Latrobe, PA.*****

Expected Completion Date	6/1/2023
--------------------------	----------

Qty	Description	Rate	Total
1	Trailer - Restroom - ADA - Lowering Frame - PRO - 14.5'-3 - ADA+2 - R1 - (Layout includes 3 rooms. One large Unisex ADA compliant room with ADA toilet and ADA Sink. Men's room with toilet, urinal and sink/vanity. Women's room with toilet and sink/vanity. ADA Ramp Included with Trailer)	74,751.28	74,751.28
	CHASSIS:		
1	Steel Tube Frame with Two Part Epoxy Automotive Grade Paint- Black		0.00
1	2 5/16" Ball Hitch		0.00
1	6,500 lb Torsion Axle W/Electric Brakes		0.00
2	17.5" Radial Tires with 8 Hole Aluminum Wheels		0.00
1	7K Hydraulic Tongue Jack		0.00
2	12K Hydraulic Axle Cylinders		0.00
1	3000 PSI Direct Drive Hydraulic Pump with Manual Override		0.00
1	Hydraulic Lowering Axle/Frame System for ADA Access		0.00
1	Wireless Remote for Hydraulic System		0.00
2	Pressure Activated Hydraulic Cylinder Lock Blocks (to prevent frame from lowering in the event of a hydraulic line failure during transportation)		0.00
	EXTERIOR FEATURES:		
1	36" x 80" ADA Entrance Door-White		0.00
2	26" x 76" Entrance Door-White		0.00
1	26" Mechanical Room Door, White		0.00
1	ADA Aluminum Ramp System with Platform and Railing- Slide away design for simple assembly and storage		0.00
	INTERIOR FEATURES:		
1	One Piece Vinyl Flooring		0.00
1	Seamless Gel-Coated Fiberglass wall		0.00
1	One Piece Gel-Coated Fiberglass Ceiling		0.00
1	Powder Coated Aluminum Trim - White		0.00
1	ADA Mirror		0.00
2	Mirror		0.00
3	Toilet Paper Dispenser (Double Roll)- Stainless		0.00
3	Paper Towel Dispenser - Stainless		0.00
1	ADA Compliant Grab Bar Package		0.00
	ELECTRICAL:		
1	13,500 BTU A/C with decorative Airbox		0.00
1	5000 BTU Heat Strip		0.00
1	Smart Touch Digital Thermostat		0.00
1	7 Pin Plug, Break Away Protection		0.00
1	Converter W/ Charge Protection - 30 AMP		0.00
1	Full Size Deep Cycle Battery Group 24 with case		0.00
1	LED Exterior & Dot Safety Lights		0.00
1	LED Interior Lighting Pkg.		0.00
4	LED Entrance Lights		0.00
2	15'- 12 Gauge Power Cord 110V with 20Amp Plug		0.00
1	Individually Fused LED 6 Gang Switch Panel		0.00
1	Techedge Monitoring System (Waste Tank)		0.00

SIGNATURE _____

Page 1 DATE: _____

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QUOTE

Date	QUOTE #
1/12/2023	6299

Name / Address
Shumaker Engineering Bill Lane

***** FOB Latrobe, PA.*****

Expected Completion Date	6/1/2023
--------------------------	----------

Qty	Description	Rate	Total
PLUMBING:			
1	ADA Toilet With Grinder/Macerator Pump		0.00
2	Dometic 310- Toilet		0.00
1	ADA Compliant Wall Mount Sink		0.00
2	Stainless Steel Sink in HDPE Vanity		0.00
3	Metered Faucet		0.00
1	City Water Fill, 3/4" Garden Hose Connection		0.00
1	Water Lines inside Trailer, Weather Protected		0.00
1	All Toilets and Sinks Individually Valved		0.00
1	300 (aprox) Gallon 1/2" Weld Co-Poly Waste Tank		0.00
1	Dump Valve 3" with Quick Connect		0.00
ADDITIONAL OPTIONS:			
1	Fresh Water System - Restroom - ADA - Lowering Frame - PRO - 14.5'-3 - ADA +2 - R1 - (Two 105 gallon holding tanks with pump and strapping)	2,159.14	2,159.14
1	WINTER PACKAGE - Restroom - ADA - Lowering Frame - 14.5'-3 - ADA+2 - 1M x 1F x 1U - Private - 50A/240V - Package Includes - Insulated Waste Tank - Insulated Dump Valve - Waste Tank Heaters - Dump Valve Heaters - Electric Room Heaters - Mechanical Room Heater - Water Heater ***240V-50Amp Power Inlet Required***	5,834.58	5,834.58

25% Non-Refundable deposit required to reserve production slot – remaining balance due two (2) weeks prior to expected completion date. All deposits are nonrefundable, if a trailer order is cancelled for any reason after a signed estimate and deposit is received the deposit will be forfeited and no credits or refunds will be given. If remaining balance is not received within 7 days from invoice date, the trailer deposit will be forfeited and the trailer will be resold by Lang Specialty Trailers. No refunds or credits will be given for the forfeited deposit.

Subtotal	\$82,745.00
Sales Tax (6.0%)	\$0.00
Total	\$82,745.00

SIGNATURE _____ Page 2 DATE: _____

14.5'-3 ADA +2 Lowering Frame Floor Plan E with Dimensions



724-972-6590

www.LangRestroomTrailers.com

