"Simplicity of life, even the barest, is not misery but the very foundation of refinement."

William Morris

Technically, a "composting toilet" is a toilet in which composting takes place. Usually, the composting chamber is located under the toilet. Other toilets are simply collection devices in which humanure is deposited, then removed to a separate composting location away from the toilet area. These toilets are components of "composting toilet systems," rather than composting toilets, *per se*.

Humanure composting toilets and systems can generally be divided into two categories based on the composting temperatures they generate. Some toilet systems produce thermophilic (hot) compost; others produce low-temperature compost. Most commercial
and homemade composting toilets are low-temperature composting toilets, sometimes called "mouldering toilets."

The most basic way to compost humanure is simply to collect it in a toilet receptacle and add it to a compost pile. The toilet acts only as a collection device, while the composting takes place at a separate location. Such a toilet requires little, if any, expense, and can be constructed and operated by people of simple means in a wide range of cultures around the world. It is easy to create thermophilic (hot) compost with such a collection toilet. This type of toilet is discussed in detail in Chapter 8, "The Tao of Compost."

The toilets of the future will also be collection devices rather than waste disposal devices. The collected organic material will be hauled away from homes and composted under the responsibility of municipal authorities, perhaps under contract with a private sector composting facility. Currently, other recyclable materials such as bottles and cans are collected from homes by municipalities; in some areas organic food materials are also collected and composted at centralized composting facilities. The day will come when those collected organic materials will include toilet materials.

In the meantime, homeowners who want to make compost rather than sewage must do so independently by either constructing a composting toilet of their own, buying a commercial composting toilet, or using a simple collection toilet with a separate composting bin. The option one chooses depends upon how much money one wants to spend, where one lives, and how much involvement one wants in the compost-making process.

A simple sawdust toilet (a collection toilet) with a separate compost bin is the least expensive, but tends to be limited to homes where an outdoor compost bin can be utilized. Such a toilet is only attractive to people who don't mind the regular job of emptying containers of compost onto a compost pile, and who are willing to responsibly manage the compost to prevent odor and to ensure thermophilic conditions.

Homemade composting toilets, on the other hand, generally include a compost bin underneath the toilet and do not involve carting humanure to a separate compost pile. They tend to be less expensive than commercial composting toilets, and they can be built to whatever size and capacity the household requires, allowing for some creativity in their design. They are usually permanent structures located under the dwelling in a crawl space or basement, but they can also be free-standing outdoor structures. The walls are typically made of a concrete material, and the toilets are most successful when properly managed. Such management includes the regular addition to the toilet contents of sufficient carbon-based bulking material, such as sawdust, peat moss, straw, hay, or weeds. Homemade composting toilets generally do not require water or electricity. Commercial composting toilets come in all shapes, types, sizes, and price ranges. They are usually made of fiberglass or plastic, and consist of a composting chamber underneath the toilet seat. Some of them use water and some of them require electricity. Some require neither. A list of commercial compost toilet manufacturers follows this chapter.
COMPOSTING TOILETS MUST BE MANAGED

We have used flush toilets for so long that after we defecate we expect to simply pull a handle and walk away. Some think that composting toilets should behave in the same manner. However, flush toilets are *disposal* devices that create pollution and waste soil nutrients. Composting toilets are recycling devices that should create no pollution and should recover the soil nutrients in human manure and urine. When you push a handle on a flush toilet, you're paying someone to dispose of your waste for you. Not only are you paying for the water, for the electricity, and for the wastewater treatment costs, but you are also contributing to the environmental problems inherent in waste disposal. When you use a composting toilet, you are getting paid for the small amount of effort you expend in recycling your organic material. Your payment is in the form of compost. Composting toilets, therefore, require some management. You have to *do* something besides just pushing a handle and walking away.

The degree of your involvement will depend on the type of toilet you are using. In most cases, this involves simply adding some clean organic cover material such as peat moss, sawdust, rice hulls, or leaf mould to the toilet after each use. Instead of flushing, you cover. Nevertheless, someone must take responsibility for the overall management of the toilet. This is usually the homeowner, or someone else who has volunteered for the task. Their job is simply to make sure sufficient cover materials are available and being used in the toilet. They must also add bulking materials to the toilet contents when needed, and make sure the toilet is not being used beyond its capacity, not becoming waterlogged, and not breeding flies. Remember that a composting toilet houses an organic mass with a high level of microscopic biodiversity. The contents are alive, and must be watched over and managed to ensure greatest success.
FECOPHOBIA AND THE PATHOGEN ISSUE

The belief that humanure is unsafe for agricultural use is called fecophobia, a term, I admit, I made up. People who are fecophobic can suffer from severe fecophobia or a relatively mild fecophobia, the mildest form being little more than a healthy concern about personal hygiene. Severe fecophobics do not want to use humanure for food growing, composted or not. They believe that it's dangerous and unwise to use such a material in their garden. Milder fecophobics may, however, compost humanure and use the finished compost in horticultural applications. People who are not fecophobic may compost humanure and utilize it in their food garden. Some may even use it raw, a practice not recommended by the author.

It is well known that humanure contains the potential to harbor disease-causing microorganisms (pathogens). This potential is directly related to the state of health in the population which is producing the excrement. If a family is composting its own humanure, for example, and it is a healthy family, the danger in the production and use of the compost will be very low. If one is composting the humanure from orphanages in Haiti where intestinal parasites are endemic, then extra precautions must be taken to ensure maximum pathogen death. Compost temperatures must rise significantly above the temperature of the human body (37°C or 98.6°F) in order to begin eliminating disease-causing organisms, as human pathogens thrive at temperatures similar to that of their hosts. On the other hand, most pathogens only have a limited viability outside the human body, and given enough time, will die even in low-temperature compost.

Humanure is best rendered hygienically safe by thermophilic composting. To achieve this, humanure can simply be collected and deposited on an outdoor compost pile like any other compost material. Open-air, outdoor compost piles with good access are easily managed and offer a no-cost, odorless method to achieve the thermophilic composting of humanure. However, such a system does require the regular collection and cartage of the organic material to the compost pile, making it relatively labor intensive when compared to low-temperature, stationary, homemade and commercial composting toilets.

Many people will use a composting toilet only if they do not have to do anything in any way related to the toilet contents. Therefore, most homemade and commercial composting toilets are comprised of large composting chambers under the toilet seat. The organic material is deposited directly into a composting chamber, and the contents are emptied only very occasionally.

Thermophilic conditions do not seem to be common in these toilets, for several reasons. For one, many commercial composting toilets are designed to dehydrate the organic material deposited in them. This dehydration is achieved by electrical fans, which rob the organic mass of moisture and heat. Commercial toilets also often strive to reduce the
quantity of material collecting in the composting chamber (mostly by dehydration), in order to limit the frequency of emptying for the sake of the convenience of the user. Bulky air-entrapping additions to the compost are not encouraged, although these additions will encourage thermophilic composting. Yet, even passive, low-temperature composting will eventually yield a relatively pathogen-free compost after a period of time.

Low-temperature composting toilets include most commercial and many homemade units. According to current scientific evidence, a few months retention time in just about any composting toilet will result in the deaths of nearly all human pathogens (see Chapter 7). The most persistent pathogen seems to be the roundworm (*Ascaris lumbricoides*) and particularly the egg of the roundworm, which is protected by an outer covering which resists chemicals and adverse environmental conditions. Estimates of the survival time of *Ascaris* eggs in certain soil types under certain conditions are as high as ten years. Although the *Ascaris* eggs are readily destroyed by thermophilic composting, they may survive in conditions generated by a low-temperature toilet. This is why the compost resulting from such toilets is generally not recommended for garden use if it comes in contact with food crops.

People can become rather obsessive about this issue. One man who published a book on this topic wrote to me to say that a two year retention time in a low-temperature composting toilet is generally considered adequate for the destruction of *Ascaris* ova (eggs). He indicated that he would never consider using his own low-temperature compost until it had aged at least two years. I asked him if he was infected with roundworms. He said no. I asked him if anyone else was using his toilet. No. I asked him what he was worried about then. Why would he think there could be roundworm eggs in his compost when he knew he didn't have roundworms in the first place? Sometimes common sense is not so common. The potential dangers of humanure can be blown way out of proportion. This is similar to the phobic person who would never go to a movie theater because there may be someone in the theater who has tuberculosis and who may sneeze. Although this is a risk we all take, it's not likely to be a problem.
OWNER-BUILT COMPOSTING TOILETS

Owner-built composting toilets are in widespread use throughout the world since many people do not have the financial resources required to purchase commercially produced toilets. They tend to be low-temperature composting toilets, although they can conceivably be thermophilic toilet systems if properly managed.

The objectives of any composting toilet should be to achieve safe and sanitary treatment of fecal material, to conserve water, to function with a minimum of maintenance and energy consumption, to operate without unpleasant odors, and to recycle humanure for agricultural use.

The primary advantage of low-temperature toilets is the passive involvement of the user. The toilet collection area need not be entered into very often unless, perhaps, to rake the pile flat. The pile that collects in the chamber must be raked somewhat every few months (which can be done through a floor access door), and the chamber is emptied only after nothing has been deposited in it for at least a year or two, although this time period may vary depending on the individual system used.

In order for this system to work well, each toilet must have two chambers. Fecal material and urine are deposited into the first chamber until it's full, then the second chamber is used while the first ages. By the time the second side is full, the first should be ready to empty. It may take several years to fill a side, depending on its capacity and the number of users. In addition to feces, carbonaceous organic matter such as sawdust, as well as bulky vegetable matter such as straw and weeds, are regularly added to the chamber in use. A clean cover of such material is maintained over the compost at all times for odor prevention (see Figure 6.1).
Some of these composting toilets involve the separation of urine from feces. This is done by urinating into a separate container or into a diversion device which causes the urine to collect separately from the feces. The reason for separating urine from feces is that the urine/feces blend contains too much nitrogen to allow for effective composting and the collected material can get too wet and odorous. Therefore, the urine is collected separately, reducing the nitrogen, the liquid content, and the odor of the collected material (see Figure 6.2).
An alternative method of achieving the same result which does not require the separation of urine from feces does exist. Organic material with too much nitrogen for effective composting (such as a urine/feces mixture) can be balanced by adding more carbon material such as sawdust, rather than by removing the urine. The added carbon material absorbs the excess liquid and will cover the refuse sufficiently to eliminate odor completely. This also sets the stage for thermophilic composting because of the carbon/nitrogen balancing.

One may also "precharge" the toilet with a "biological sponge," a thick layer of absorbent cellulose material filling the bottom of the compost chamber to a depth of up to 50% of its capacity. Some suggest that the toilet can be filled to 100% of its capacity before beginning to be used, because if the material is loose (such as loose hay), it will compress under the weight of the added humanure. A bottom sponge may consist of bales of hay or straw buried in sawdust. These materials absorb the excess urine as it is added to the toilet. Fecal material is covered after each use with materials such as sawdust, peat, leaf mould, or rice hulls. A drain into a five gallon bucket (perhaps pre-filled with sawdust) will collect any leachate, which can simply be deposited back on the compost pile. Extra bulking materials such as straw, weeds, hay, and food scraps are regularly added to the compost chamber to help oxygenate and feed the growing organic mass in order to promote thermophilic decomposition. Ventilation can be enhanced by utilizing a vertical pipe installed like a chimney, which will allow air to passively circulate into and out of the compost chamber.
Such systems will need to be custom-managed according to the circumstances of the individuals using them. Someone needs to keep an eye on the toilet chambers to make sure they're receiving enough bulking material. The deposits need to be flattened regularly so that they remain covered and odorless. Chutes that channel humanure from the toilet seat to the compost chamber must be cleaned regularly in order to prevent odors. When one compost chamber is filled, it must be rested while the other is filled. A close eye on the toilet contents will prevent waterlogging. Any leachate system must be monitored. In short, any composting toilet will require some management. Remember that you are actively recycling organic material, and that means you are doing something constructive. When you consider the value of the finished compost, you can also consider this: every time you deposit into a composting toilet, it's as if you're putting money in the bank.

Homemade low temperature composting toilets offer a method of composting humanure that is attractive to persons wanting a low-maintenance, low-cost, fairly passive approach to excrement recycling. Any effort which constructively returns organic refuse to the soil without polluting water or the environment certainly demands a high level of commendation.
Asian Composting

It is well known that Asians have recycled humanure for centuries, possibly millennia. How did they do it? Historical information concerning the composting of humanure in Asia seems difficult to find. Rybczynski et al. state that composting was only introduced to China in a systematic way in the 1930s and that it wasn't until 1956 that composting toilets were used on a wide scale in Vietnam. On the other hand, Franceys et al. tell us that composting "has been practiced by farmers and gardeners throughout the world for many centuries." They add that, "In China, the practice of composting [humanure] with crop residues has enabled the soil to support high population densities without loss of fertility for more than 4000 years." 

However, a book published in 1978 and translated directly from the original Chinese indicates that composting has not been a cultural practice in China until only recently. An agricultural report from the Province of Hopei, for example, states that the standardized management and hygienic disposal (i.e., composting) of excreta and urine was only initiated there in 1964. The composting techniques being developed at that time included the segregation of feces and urine, which were later "poured into a mixing tank and mixed well to form a dense fecal liquid" before piling on a compost heap. The compost was made of 25% human feces and urine, 25% livestock manure, 25% miscellaneous organic refuse, and 25% soil.

Two aerobic methods of composting were reported to be in widespread use in China, according to the 1978 report. The two methods are described as: 1) surface aerobic continuous composting; and 2) pit aerobic continuous composting. The surface method involves constructing a compost pile around an internal framework of bamboo, approximately nine feet by nine feet by three feet high (3m x 3m x 1m). Compost ingredients include fecal material (both human and non-human), organic refuse, and soil. The bamboo is removed from the constructed pile and the resultant holes allow for the penetration of air into this rather large pile of refuse. The pile is then covered with earth or an earth/horse manure mix, and left to decompose for 20 to 30 days, after which the composted material is used in agriculture.

The pit method involves constructing compost pits five feet wide and four feet deep by various lengths, and digging channels in the floor of the pits. The channels (one lengthwise and two widthwise) are covered with coarse organic material such as millet.
stalks, and a bamboo pole is placed vertically along the walls of the pit at the end of each channel. The pit is then filled with organic refuse and covered with earth, and the bamboo poles are removed to allow for air circulation.

A report from a hygienic committee of the Province of Shantung provides us with additional information on Chinese composting. The report lists three traditional methods used in that province for the recycling of humanure:

1) Drying it - "Drying has been the most common method of treating human excrement and urine for years." It is a method that causes a significant loss of nitrogen;

2) Using it raw, a method that is well known for pathogen transmission; and

3) "Connecting the household pit privy to the pigpen . . . a method that has been used for centuries." An unsanitary method in which the excrement was simply eaten by a pig.

No mention is made whatsoever of composting being a traditional method used by the Chinese for recycling humanure. On the contrary, all indications were that the Chinese government in the 1960s was, at that time, attempting to establish composting as preferable to the three traditional recycling methods listed above, mainly because the three methods were hygienically unsafe, while composting, when properly managed, would destroy pathogens in humanure while preserving agriculturally valuable nutrients. This report also indicated that soil was being used as an ingredient in the compost, or, to quote directly, "Generally, it is adequate to combine 40-50% of excreta and urine with 50-60% of polluted soil and weeds."

For further information on Asian composting, I must defer to Rybczynski et al., whose World Bank research on low-cost options for sanitation considered over 20,000 references and reviewed approximately 1200 documents. Their review of Asian composting is brief, but includes the following information, which I have condensed:

There are no reports of composting privys (toilets) being used on a wide scale until the 1950s, when the Democratic Republic of Vietnam initiated a five-year plan of rural hygiene and a large number of anaerobic composting toilets were built. These toilets, known as the Vietnamese Double Vault, consisted of two above ground water-tight tanks, or vaults, for the collection of humanure (see Figure 6.3). For a family of five to ten people, each vault was required to be 1.2 m wide, 0.7 m high, and 1.7 m long (approximately 4 feet wide by 28 inches high and 5 feet 7 inches long). One tank is used until full and left to decompose while the other tank is used. The use of this sort of composting toilet requires the segregation of urine, which is diverted to a separate receptacle through a groove on the floor of the toilet. Fecal material is collected in the tank and covered with soil, where it anaerobically decomposes. Kitchen ashes are added to the fecal material for the purpose of reducing odor.

Eighty-five percent of intestinal worm eggs, one of the most persistently viable forms of human pathogens, were found to be destroyed after a two month composting period in
this system. However, according to Vietnamese health authorities, forty-five days in a sealed vault is adequate for the complete destruction of all bacteria and intestinal parasites (presumably they mean pathogenic bacteria). Compost from such latrines is reported to increase crop yields by 10-25% in comparison to the use of raw humanure. The success of the Vietnamese Double Vault required "long and persistent health education programs." 

When the Vietnamese Double Vault composting toilet system was exported to Mexico and Central America, the result was "overwhelming positive," according to one source, who adds, "Properly managed there is no smell and no fly breeding in these toilets. They seem to work particularly well in the dry climate of the Mexican highlands. Where the system has failed (wetness in the processing chamber, odours, fly breeding) it was usually due to non-existent, weak, or bungled information, training and follow-up." A lack of training and a poor understanding of the composting processes can cause any humanure composting system to become problematic. Conversely, complete information and an educated interest will ensure the success of humanure composting systems.

Another anaerobic double-vault composting toilet used in Vietnam includes using both fecal material and urine. In this system, the bottom of the vaults are perforated to allow drainage, and urine is filtered through limestone to neutralize acidity. Other organic refuse is also added to the vaults, and ventilation is provided via a pipe.

In India, the composting of organic refuse and humanure is advocated by the government. A study of such compost prepared in pits in the 1950s showed that intestinal worm parasites and pathogenic bacteria were completely eliminated in three months. The destruction of pathogens in the compost was attributed to the maintenance of a temperature of about 40°C (104°F) for a period of 10-15 days. However, it was also concluded that the compost pits had to be properly constructed and managed, and the compost not removed until fully "ripe," in order to achieve the total destruction of human pathogens. If done properly, it is reported that "there is very little hygienic risk involved in the use and handling of [humanure] compost for agricultural purposes." 

In short, it doesn't look like the Asians have a lot to offer us with regard to composting toilet designs. Perhaps we should instead look to the Scandinavians, who have developed many commercial composting toilets.
COMMERCIAL COMPOSTING TOILETS

Commercial composting toilets have been popular in Scandinavia for some time; at least twenty-one different composting toilets were on the market in Norway alone in 1975. One of the most popular types of commercially available composting toilets in the United States today is the multrum toilet, invented by a Swedish engineer and first put into production in 1964 (see Figure 6.4). Fecal material and urine are deposited together into a single chamber with a double bottom. The decomposition takes place over a period of years, and the finished compost gradually falls down to the very bottom of the toilet chamber where it can be removed. Again, the decomposition temperatures remain cool, not usually climbing above 32°C (90°F). Therefore, it is recommended that the finished compost be buried under one foot of soil or used in an ornamental garden.

Because no water is used or required during the operation of this toilet, human excrement is kept out of water supplies, conserving water. According to one report, a single person using a Clivus (pronounced Clee-vus) Multrum (see Figure 6.5) will produce 40 kg (88 lbs) of compost per year while refraining from polluting 25,000 liters (6,604 gallons) of water annually. The finished compost can be used as a soil additive where the compost will not come in contact with food crops.

A 1977 report issued by Clivus Multrum USA analyzed the nutrient content in finished compost from seven Clivus Multrum toilets which had been in use for 4 to 14 years. The compost averaged 58% organic matter, with 2.4% nitrogen, 3.6% phosphorous, and 3.9% potassium, reportedly higher than composted sewage sludge, municipal compost, or ordinary garden compost. Suitable concentrations of trace nutrients were also found. Toxic metals were found to exist in concentrations far below recommended safe levels.
If a multrum toilet is managed properly, it should easily be odor and worry-free. As always, a good understanding of the basic concepts of composting helps anyone who wishes to use a composting toilet. Nevertheless, the multrum toilets, when used properly, should provide a suitable alternative to flush toilets for people who want to stop defecating in their drinking water. You can probably grow a heck of a rose garden with the compost, too.

Inexpensive versions of multrum toilets were introduced into the Philippines, Argentina, Botswana, and Tanzania, but were not successful. According to one source, "Compost units I inspected in Africa were the most unpleasant and foul-smelling household latrines I have experienced. The trouble was that the mixture of excreta and vegetable matter was too wet, and insufficient vegetable matter was added, especially during the dry season." Poor management and a lack of understanding of how composting works will create problems with any compost toilet. Too much liquid will create anaerobic conditions with consequent odors. The aerobic nature of the organic mass can be improved by the regular addition of carbonaceous bulking materials. Compost toilets are not pit latrines. You cannot just defecate in a hole and walk away. If you do, your nose will let you know that you're doing something wrong.
Besides the Scandinavian multrum toilets, a variety of other composting toilets are available on the market today. One manufacturer claims that over 200,000 of their composting toilets have been sold worldwide. The same manufacturer produces a fiberglass and stainless steel toilet which consists of a drum under the toilet seat or under the bathroom floor into which the feces and urine are deposited. The drum is rotated by hand in order to blend the ingredients, which should include food scraps and a carbon material such as peat moss. The toilet can come equipped with an electric heating system and an electrical fan ventilation system. The compost, produced in small quantities which are removed by pulling out a drawer beneath the drum, is said to be suitable for garden purposes. Some of the models require water as well as electricity (although some require no electricity or water).

Other composting toilets cost upwards of $10,000 or more, and can be equipped with insulated tanks, conveyers, motor-driven agitators, pumps, sprayers, and exhaust fans. According to a composting toilet manufacturer, waterless composting toilets can reduce household water consumption by 40,000 gallons (151,423 liters) per year. This is significant when one considers that only 3% of the Earth's water is not salt water, and two-thirds of that freshwater is locked up in ice. That means that less than one percent of the Earth's water is available as drinking water. Why shit in it?
Figure 6.5
CAROUSEL STYLE COMPOSTING TOILETS
When one chamber is full, the bin is rotated.

Figure 6.7
SOLAR TOILET
COMPOSTING TOILETS AND RELATED PRODUCTS: MANUFACTURERS AND SUPPLIERS

(Special Thanks to the World of Composting Toilets Website at: http://www.compostingtoilet.org)

This list is provided for informational purposes only. Inclusion on this list does not constitute an endorsement by the author.

AUSTRALIA

CLIVUS MULTRUM AUSTRALIA
115 Railway Avenue, Strathpine, Qld 4500, Australia

Phone: 61 7 3889 6144
Fax: 61 7 3889 6149
Mobile phone: 0419 657851
Website: http://www.clivusmultrum.com.au
Email: info@clivusmultrum.com.au
Contact: Tony Rapson
Sells the Clivus Multrum range of toilets and graywater systems as well as toilet buildings for use in National Parks and Public areas. Also acts as agent for Separett and EnviroLet composting toilets.

CLIVUS MULTRUM TOILET SYSTEMS (Agent)
9 Holland Street, Fremantle 6160, Western Australia, Australia
Phone: (08) 9430 7777
Fax: 61 8 9430 4305
Email: gaianet@cygnus.uwa.edu.au
Agent for Clivus Multrum composting toilets in western Australia.

CLOSET DEPOSIT
3 Redash Place, Cabarita Beach, NSW 2488 Australia;
Contact: Graham Clements;
Supplies own design, inclined base, fibreglass composting chamber. Improved ventilation system for reduced tank size. Also supplies artificial wetlands graywater system in ferrocement or HDPE plastic with flowform water conditioners.
Supply and install single batch tank system with compost extortion auger. Emphasis on worm and compost fauna treatment. Also incorporating graywater treatment.

GARRY SCOTT COMPOST TOILET SYSTEMS
Mullumbimby NSW, 2482, Australia
Phone/Fax: (02) 66 83468
Email: compost@mullum.com.au
Design, manufacture, supply and service of a wide range of waterless compost toilets. Independent agent for systems manufactured by Clivus Multrum, Natureloo, Envirolet, Separett and selected others. Manufacture of lowcost PBD and Wheelie Batch systems. Ownerbuilder assistance with consultation, components, plans and books. Agent for the Hybrid toilet system, a septic system, with no flush, secondary treatment and excellent performance.

NATURE-LOO
Savannah Environmental Pty Ltd, 74 Brisbane Street, Bulimba, QLD 4171, Australia
Postal Address: P.O. Box 150, Bulimba, Queensland, Australia 4171
Phone: 61 7 3395 6800
Fax: 61 7 3395 5322
Email: info@nature-loo.com.au
Website: http://www.nature-loo.com.au
Contact: Carla Gregg
Patented market-leader in domestic composting toilets: inexpensive, aerated tank, odour-free, batch system. Classic model easily owner-installed in space under floor. Self-contained Compact model can be installed on slab floor, and is suitable for temporary accommodation, holiday cabins, building sites, camp grounds, etc. Also markets toilet buildings suitable for golf courses, building sites, etc.

ROTA-LOO COMPOSTING TOILET
41A Jarrah Drive or PO Box 988, Braeside, Victoria 3195 Australia
Phone: 61 3 9587 2447
Fax: 61 3 9587 5622
Website: http://www.rotaloo.com
E mail: buzzburrows@rotaloo.com
General info: enquiry@rotaloo.com
Contact: Buzz Burrows (General Manager)
Domestic models, Mini 650, Standard 950 all with removable compost bins. Commercial models, Maxi 1200 (Fiberglass) Maxi 2000, all with removable compost bins. Soltran buildings, remote location Public Toilet Facilities, supplied in kit form in any configuration with combinations of two cubicles either standard or disabled. Graywater
systems, plans available for passive systems or electropurification system will clean
graywater to potable standard. Other products: Bacterial agents to speed up the
decompostion rate. Bacterial agents that terminate odour problems in bad installations.
Full range of accessories, fiberglass and ceramic pedestals. Urinals that don't need water
for cleaning.

BELGIUM

ECOSAVE SEPERETT (Agent)
Flierenbos 67, 2370 Arendonk, Belgium Ph/Fax: 32 14 67 20 04; Agent for Septum and
Separett urine separating composting toilets.

CANADA

CLIVUS MULTRUM CANADA LIAISON OFFICE
1911 Lorraine Place, Ann Arbor, MI 48104-3607
Contact: Laurence Scott
Phone: 734-995-4767
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CLIVUS MULTRUM CANADA LTD.
1558 Queen Street, East Toronto, Ontario, M4L 1E8 or P.O.Box 783 - Station A,
Windsor, Ontario, N9A 6N8
Phone: 800-645-4767
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Email: naylorscott@compuserve.com

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Phone: 734-995-4767
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COMPOSTING TOILETS WESTERN (Agent)
1278 Inglewood Avenue, West Vancouver, B.C. B7T 1Y6, Canada
Phone: 1-604-926-3748
Fax: 1-604-926-4854
Contact: Bob Tapp

COMPOSTING TOILETS WESTERN
23646 16th Avenue, Langley B.C.V2Z 1K9, Canada
Phone/Fax: 1-604-533-5207
Contact: J. Rockandel
Supply and install Clivus Multrum composting toilets and Sum-mar composting toilets.

SANCOR
140-30 Milner Ave., Toronto, Ontario M1S 3R3 Canada

SUNERGY SYSTEMS LTD.
Box 70, Cremona, AB T0M 0R0, Canada
Phone: 403-637-3973
Email: sunergy@telusplanet.net
Website: http://www.compostingtoilet.com
Contact: Michael Kerfoot
Also at: SUNERGY’S B.C. OFFICE
2945 Haliday Crescent, Nanaimo, B.C. V9T 1B2 Canada
Phone: 250-751-0053
Fax: 250-751-0063
Sunergy distributes Phoenix composting toilet systems in Canada for residential and public facility applications. Installations from coast to coast include National Parks, Provincial Parks, roadside rest areas, golf courses, responsible housing, etc. Design integrates solar/energy/resource efficiency with a natural whimsy.

SUN-MAR CORPORATION
5035 N Service Rd C9, Burlington Ontario L7L 5V2 Canada
Phone: 1-905-332-1314
Fax: 1-905-332-1315
For a Free Catalogue Call: 1-800-461-2461
Email: compost@sun-mar.com
Website: http://www.sun-mar.com
Long time successful suppliers of bathroom installed composting toilets. Large range of models available for differing situations; both residential and cottage use toilets available.

CHILE

MINIMET
S.A. Av. 11 de Septiembre 1860, Of. 106, Santiago, Chile
Contact: Jaime Arancibia
Phone: 56-2-233-53 69 Fax: 56-2-232-11 95
Email: ggmiminet@entelchile.net
Manufactures and sells Clivus Multrum products under license from Clivus Multrum, USA.
DENMARK

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Ordrupvej 101, DK-2920 Charlottenlund, Denmark
Phone: 45 39 63 33 64
Fax: 45 39 63 64 55
Email: backlund@backlund.dk
We work with ecological environmental engineering and waste to energy subjects. We sell no-mixing composting toilets in plastic, pine wood, metal or china. Our big composting units are made of stainless steel or glassfiber with geotextile sacks. The toilets are either without flushing, with single flushing for urine, double flushing for both urine and feces (but separate), or with vacuum for feces and gravitation for urine. Agent for Separett, Septum, Mullis, WM-Ekologen.

B & O BYGGEINDUSTRI A/S
Pakhus 12, Sdr. Frihavn, Dampfaergevej 8, 2100 Kobenhaun 0, Denmark
Contact: Dany Vandy
Phone: 45 35 43 01 01
Fax: 45 35 43 25 22
Website: http://www.bobyg.dk
Email: info@bobyg.dk
Sells and markets Clivus Multrum products as agent for Clivus AB, Sweden.

FINLAND

EKOLET (Biolett)
Estetie 3, FIN-00430 Helsinki, Finland
Phone: +358 40 546 4775, Fax: +358 9 563 5056
Email: ekolet@ekolet.com
Website: http://www.ekolet.com
The Ekolet composting toilet is the manufacturer's own design for domestic and cottage use. Good experience and test results for over 10 years. Requires no water, no additives, low or no el. requirements, cleans the liquid biologically so it can be piped along with graywater. Consists of a toilet seat and a 4 chamber rotating composting tank (polyethene, stainless steel) under the floor. The end-product is ready-to-use odorless fertilizer.

LUONTO-LAITE OY
Kasiniemenraitin 229, Fin-17740 Kasiniemi, Finland
Phone: +358 (0) 3 556 8132
Fax +358 (0)3 556 8133
Email: luontola@sci.fi
Marketing: NEXET OY
Ravurinkatu 11 FIN-20380 Turku, Finland
Phone: +358 (0)2 276 0250
Fax: +358 (0)2 276 0251
Email: nexet@nexet.fi
Website: http://www.saunalahti.fi/luontola


GERMANY

BIOTECHNIK (Agent)
Sigrid Habel, Lessingstr.6, D-04109 Leipzig Germany
Phone: 49 342 234 8657
Fax: 49 341 980 3391
Agent for Biolett (Ekolet) composting toilets.

PEUSER GMBH (Agent)
Siloweg 1, D-56479 Neunkirchen/Ww Germany
Phone: 49 6436 35 45
Fax: 49 6436 64 99
Agent for Septum toilets and products.

PEUSER GMBH (Agent)
Stollberger Strasse 31 D-09221 Neunkirchen/bei Chemnitz, Germany
Phone: 49 371 281 21 00
Fax: 49 371 281 21 50
Agent for Septum and Separett composting toilets and products.

SANITÄR U. HEIZUNG (Agent)
Uwe Reimer, Hallesche Strasse 9, D-04509 Delitzsch, Germany
Phone: 49 342 025 9281
Fax: 49 177 275 0928
Agent for Biolett (Ekolet) composting toilets.

C. & M. SCHÖNBERGER GBR (Agent)
Blumenstrasse 11; D-61239 Langenhain
Phone: 49 6002-92990
Fax: 49 6002-92980
Agent for Separett Toilets

SOLTEC GMBH (Agent)
Wichmannstrasse 4, Bldg. 10, D-22607 Hamburg, Germany
Phone: +49 40 89 50-25
Fax: +49 40 89 50-28
Email: soltec@enbil.de
Agent for Biolett (Ekolet) composting toilets.

IRELAND

THE OLD RECTORY ROBERT FORRESTER, EASKEY, CO.
Sligo Republic of Ireland
Phone/Fax: 353 96 49 181
Email: adlib@tinet.ie
Agent for Septum and Separett servicing both UK and Ireland.

ISRAEL

ECONET ENVIRONMENTAL TECHNOLOGIES & PROJECTS LTD
Dr. Amram Pruginin, 11 Bialik St, Jerusalem, Israel
Phone/Fax: (972) 2-653 61 71
Email: msamram@pluto.msc.hji.ac.il
Agent for Clivus Multrum in Israel.

KOREA

CLIVUS KOREA INC.
701 Marco Polo Building, 720-20 Yeoksam-Dong, Kangnam-Ku, Seoul, 135-080 Korea
Phone: 82-2-501-4794/5
Fax: 82-2-568-4631
Contact: J.H. Um
Manufacture and market Clivus Multrum under license from Clivus Multrum USA.

LATVIA

SIA APRITE (Agent)
Gaujas iela 56, Cesis LV-4101, Latvia
Phone/Fax: 371 41 25 033
Agent for Septum toilets and products.

NETHERLANDS (HOLLAND)

CLIVUS MULTRUM ECOSAVE - Mr. Danny Vandy
Noorderbaan 25, 8256 PP Biddinghuizen, Holland
Phone: (31)-321-332-038
Fax: (31)-321-330-975
Agent for Clivus Multrum composting toilets, Septum and Separett.
TECHNISCH BUREAU HAMAR
Heykampsweg 6, 7642 LP Wierden, Netherlands
Phone: 31 546 575697
Email: tbhamar@xs4all.nl
Website: http://www.xs4all.nl/~tbhamar
Contact: Hans Baarslag; Makes and sells composting toilets for camping, temporary dwellings and replacement in normal houses. The designs are simple and utilize common materials in their manufacture. They are designed for economic treatment of toilet deposits and some household organic material.

NEW ZEALAND

ECOTECHE (Agent)
RD 1 Masters Access Rd., Kaitaia, 0500 New Zealand
Phone/Fax: 64 9 409 4993
Website: http://www.ecotech.co.nz
Email: ecotech/nzed@xtra.co.nz
Contact: J. Douglas Donnell.
Distributors of Sun-Mar composting toilets.

NORWAY

IMPERIAL ENgos AS
Langgaten 71 A, Postboxes 98 N 4301 Sandnes, Norway
Phone: 47 51 66 44 92
Fax: 47 51 62 36 07
Agent for Separett.

VERA VERA MILJO A/S
Postbox 2036, N-3239 Sandefyord Norway

SOUTH AFRICA

DRYLOO
PO Box 75619, Gardenview 2047, South Africa
Phone/Fax: 2711 615 5328
Mobile: 2782 463 0674
Email: theboys@netactive.co.za

ENVIROLOO ENVIRO OPTIONS (PTY) LTD
P.O. Box 27356, Benrose, 2011, South Africa
Phone: 27 11 6181350
Fax: 27 11 6181838
Established composting toilet maker/installer.

**SPAIN**

CLIVUS MULTRUM WILLI KNACKSTEDT
Phone /Fax: (34)-95-266 60 25
Mobile: 989 82 22 30
Email: carl@websida.com

**SWEDEN**

AQUATRON INTERNATIONAL AB
Box 2086, SE-194 02 Upplands Vasby, Sweden
Phone: +468-590 304 50
Fax: +468-590 304 94
Email: info@aquatron.se
Website: [http://www.aquatron.se](http://www.aquatron.se)
Contact: Rolf Kornemark or Torgny Sundin.
Systems that use standard flush toilets connected to composting chambers via a centrifugal separator. The composting chamber is either inclined base, single batch or 4 chamber carousel. Graywater is treated with UV prior to drainage to a Graywater infiltration bed.

CLIVUS MULTRUM AB
Ålberga Boställe, 61050 Jönåker, Sweden
Phone: (46)-155-72310
Fax: (46)-155-72390
Email: torb@clivus-multrum.se
Main office in Europe for Clivus Multrum Composting Toilets

EKOLOGEN AB
Box 11162 - 10061, Stockholm, Sweden
Phone: 46 8 641 4250
Fax: 46 8 798 5650
Urine separating composting toilet systems.

MULLIS - THE BIOLOGICAL TOILET
Luxgatan 1, 119 69 Stockholm, Sweden
Phone: 46 8 656 54 56
Fax (?): +46 8 184 71 8
Email: mullis@hem3.passagen.se
Website: [http://hem3.passagen.se/mullis](http://hem3.passagen.se/mullis)
Contact: Uno Finnstrom
Supplies an inclined base composting toilet with 4 air tracks, built in rustfree sheet metal. Can be ordered made in desired length for capacity required.
SERVATOR SEPARETT AB
Skinnebo, S-330 10 Bredaryd, Sweden
Phone: 46 371 712 20
Fax: 46 371 712 60
Email: servator@mbox200.swipnet.se
Website: http://www.separett.com
Suppliers of Lectrolav and Separett toilets, and now Septum composting toilets.

SVEN LINDEN AB
Ludvigsborg, 24394 Hoor, Sweden
Phone: 46-415-51335
Fax: 46-415-51115
Mobile: 070 584 76 52
Contact: Sven Linden
Produce a number of capacity tanks based on the single batch system with or without inclined base. Also a wheeled bin system is available.

SWEDISH ECOLOGY AB
Klippan 1A, S-414 51 Goteborg, Sweden
Phone: 46 31 42 29 30
Fax: 46 31 42 49 08
Contact: Harry Lejgren
Agent for the MullToa and Separera systems. These are the equivalent Scandinavian names for the Biolet and UFA toilets supplied by Biolet International.

SWITZERLAND

BIOLET INTERNATIONAL
Weidstrasse 18a, 6300 Zug, Switzerland
Phone : 41 41 710 4728
Fax: 41 41 710 4683
Website: http://www.biolet.com
E-mail: info@biolet.com
Established, world-wide suppliers of 9 models of unit compost toilets for bathroom and under-house installation.
UK

BARTON ACCESSORIES
Morleigh Road, Harbertonford, Totnes, Devon TQ9 7TS, England
Phone/Fax: 44 1803 732878
Supplies the WEB toilet, a waterless electronic/biological toilet unit that fits in bathroom. In-built heat treatment in composting cycle. Is able to supply world-wide. New model: 12/24v DC, small enough for recreational vehicles, boats, motor coaches, domestic; can be run from solar cells, batteries, or wind generator.

EASTWOOD SERVICES
Kitty Mill, Wash Lane, Wenhaston, Halesworth, Suffolk, IP19 9DX, England
Phone/Fax: 44 1502 478165
Contact: Adam East.
UK agent for Sun-Mar composting toilets and low flush systems. Supplier of gray and rain water recycling systems.

EKOLOGEN/NATRUM/SEPTUM EASTWOOD SERVICES
c/o Kitty Mill, Wash Lane Wenhaston Halesworth, Suffolk IP19 9DX England
Phone: 44 1502 478249
Fax: 44 1502 478165

ELEMENTAL SOLUTIONS
Oaklands Park, Newnham-on-Severn Gloucestershire, GL14 1EF, UK
Phone: 01594 516063
Fax: 01594 516821
Email mark.es@aecb.net
Contact: Mark Moodie
Incorporates 'Camphill Water' and 'Nick Grant Ecological Engineering'; responsible for over 100 reed bed sites and compost toilet installations. Ceramic composting toilet pedestals. Own design and site specific composting toilet kits. UK and Ireland agents for 'Aquatron' toilet systems. Co writers of "Sewage Solutions; Answering the Call of Nature" and "Septic Tanks." Low water use fittings. Sewage courses, and rainwater harvesting. Genuine enquiries only please.

KINGSLEY CLIVUS ENVIRONMENTAL PRODUCTS LTD.
Kingsley House, Woodside Road, Boyatt Wood Trading Estate, Eastleigh, Hampshire S050 4ET Great Britain
Phone: 44 01703 615680
Fax: 44 01703 642613
Contact: Viv Murley
Sells and markets Clivus Multrum products as agent for Clivus Multrum USA.

MAURICE MOORE
26 St Mary's Rd, Long Ditton, Surrey KT6, England
Phone: 44 181 398 7951
Agent for Soltrna/ Rota-loo in United Kingdom.

WENDAGE POLLUTION CONTROL LTD (Agent)
Rangeways Farm, Conford, Liphook, Hants UK GU30 7QP
Phone: 44 1428 751296
Fax: 44 1428 751541
Contact: Nigel Mansfield.
Agent for Biolet self-contained electrical compost toilets, in several varieties for home, caravans and portacabins. Also consultants in water, sewage and pollution control.

USA

ADVANCED COMPOSTING SYSTEMS
195 Meadows Road, Whitefish, MT, 59937, USA
Phone: 1 406 862 3855
Fax: 1 406 862 3855
Email: phoenix@compostingtoilet.com
Website: http://www.compostingtoilet.com
Contacts: Glenn Nelson, James Conner
Manufactures the Phoenix Composting Toilet, a continuous throughput system featuring odorless, waterless operation, and built-in liquid respray of the composting pile. Very low energy requirements (five watts). Options include microflush toilets, auxillary evaporators, and photovoltaic systems for off-grid installations. Residential and public facility models available.

ALASCAN CLEARWATER SYSTEM
3498 St. Albans Road, Cleveland Heights, OH 44121 USA
Phone: 1 216 382 4151
Contact: David Kern
Email: Drewid@star21.com
Originally developed, tested and supplied in Alaska. The system uses either one cup per flush, or foam flush toilets, and a basement system comprised of one composting tank, one graywater treatment tank, & optional recycling system. System effluents are topsoil & potable water. They have a 15 minute video about the system, available for $15 US including S&H.

ALASCAN OF MINNESOTA, INC.
8271 - 90th Lane, Clear Lake, MN 55319 USA
Marketing Manager: Jerry L. Carter
Phone: (320) 743-2909
Fax: (320) 743-3509
Email: mail@alascanofmn.com
Website: http://www.alascanofmn.com
ARCHITERRA ENTERPRISES, INC.
0186 SCR 1400, BRR, Silverthorne, CO 80498 USA
Phone/Fax: 970-262-6727
Email: natural@colorado.net
Website: http://thenaturalhome.com
Catalog: The Natural Home Building Source (24 pages)
We sell and install graywater system packages, and Clivus Multrum and Sun-Mar composting toilet systems.

BIOLET U.S.A.
45 Newbury Street, Boston, MA 02116 USA
Phone: (617) 578-0435
Fax: (617) 578-0465
E-mail: info@biolet.com
Website: http://www.biolet.com
Established manufacturer (since 1972) and worldwide supplier of BioLet composting toilets. Self contained, remote and non electric units are available.

BIO-RECYCLER CORP.
5308 Emerald Drive, Sykesville, MD 21784 USA
Phone: 1 410 795-2607
Fax: 1 410 549 1445
Contact: Jeremy Criss
Vermiculture based remote processing unit to which toilet deposits are delivered, using minimal water, by vacuum assisted toilet units. The resultant product is high nutrient worm castings used for soil amendment.

BIO-SUN SYSTEMS INC.
RR#2 Box 134A, Route 549, Jobs Corners, Millerton, PA 16936, USA
Toll free: (800) 847-8840
Phone:1-717 537 2200
Fax: 1 717 537 6200
Email: bio-sun@ix.netcom.com
Contact: Becky Heffner, Al White
Composting toilet system based on the use of in-situ built tank and intermittent compressed air blown through composting pile.

CENTRE FOR ECOLOGICAL POLLUTION PREVENTION
P.O. Box 1330, Concord, MA 01742-1330 USA
Phone 978-369-9440
Email: cepp@hotmail.com
The CEPP develops, promotes and demonstrates innovative lower-impact technologies and systems, with an emphasis on utilization and zero-discharge approaches. Their most important successes have been the development of low cost net composting systems that are suitable for developing countries and the development of planted treatment systems for graywater utilization.
CLIVUS MULTRUM US
15 Union Street, Lawrence MA, 01840, USA
Phone: 1 978 725 5591;
Toll Free: 1 800 4 CLIVUS
Fax: 1 978 557 9658
Email: forinfo@clivusmultrum.com
Webpage: http://clivusmultrum.com
Contact: Don Mills
Sole manufacturer of the Clivus Multrum, original design of inclined base composting
toilet. Residential models as well as commercial systems. Also sell toilet buildings and
graywater treatment systems.

CLIVUS NEW ENGLAND
P.O. BOX 127, North Andover, MA 01845 USA
Phone: 978-794-9400
Fax: 978-794-9444

CLIVUS MULTRUM GREAT LAKES, INC.
P.O. Box 1025, Ann Arbor, MI 48106 USA
Phone: 734-995-4767
Fax: 734-994-1292

COTUIT DRY TOILET
Conrad Geyser, PO Box 89, Cotuit, Massachusetts 02635 USA
Phone: 508-428-8442
Email: conradg@cape.com
Website: http://www.cape.com/cdt

"CTS" TOILET
Composting Toilet Systems, PO Box 1928, Newport, Washington 99156-1928, USA
Phone: 1 509 447 3708;
Toll Free: 888 786 4538
Fax: 1 509 447 3708
Email: cts@povn.com
Contact: Joel Jacobsen
Inclined base composting toilet system built from fibreglass. 5 models offered with NSF
International certification. Also offer pre-engineered toilet buildings and agent for Sun-
Mar composting toilets.

ECOLOGY SERVICES
PO Box 76, Delafield, WI 53018 USA
Phone/Fax: 262-646-4664
Contact: Mike Mangan
Sell and install composting toilets, graywater systems, and rainwater collection systems.
Sunmar and Phoenix toilets.
ECO-TECH/VERA ECOS, INC.
P.O. Box 1313, Concord, MA 01742-1313 USA
Phone: 978-369-3951
Fax: 978-369-2484
Email: watercon@igc.org
Website: http://www.ecologicalengineering.com
"Tools for low-water living since 1972." Sell a range of products: EcoTech Carousel compost ECO-TECH/VERA (cont.) ing toilet system, as well as composting toilet models from Vera Toga, BioLet, CTS and Sun-Mar; plans for site-built composting toilets; the Septic Protector, vacuum and micro-flush toilets; Washwater Garden graywater system; and related low-water products. Catalog $2.

JADE MOUNTAIN INC (Agent)
P.O. Box 4616, 717 Poplar, Boulder, CO 80306, USA
Phone: 1 800 442 1972 or 303 449 6601
Fax: 1 303 449 8266
Email: info@jademountain.com
Website: http://www.jademountain.com
You can now download the complete catalog and order online. Supplies a wide range of appropriate technology products (over 6000) and information which includes composting toilets and graywater treatment systems.

LEHMANS HARDWARE AND APPLIANCES (Agent)
One Lehman Circle, P.O. Box 41, Kidron, Ohio 44636, USA
Phone: 330 857 5757
Fax: 330 857 5785
Email: info@lehmans.com
Website: http://www.lehmans.com
Agent for Sunmar, Biolet and Alascan systems. Store and catalogue mail order sales of products for self-sufficiency. "Serving the Amish and others without electricity with products for simple, self sufficient living since 1955."

MOUNTAIN LION TRADING CO. (Agent)
Sales office: 2404 North Columbus Street Spokane, WA 99207-2126, USA
Phone: 1 509-487-0765 (Voice or Fax)
Email: cj@mtlion.com
Website: http://www.mtlion.com/sunmar
Sell a range of products including Sunmar composting toilets.

REAL GOODS TRADING CO. (Agent)
555 Leslie St, Ukiah, CA. 95482, USA
Phone: 1 707 468 9292
Fax: 1 707 468 9394
Email: realgoods@realgoods.com
Website: http://www.realgoods.com
Sun-mar and Biolet composting toilet agents. Stores in Hopland, CA, Eugene, OR and Amherst, WI.

SMARTER WATER COMPANY
Atlanta, GA USA
Email: email@smarterwater.com
Website: http://www.smarterwater.com
Southeastern U.S. distributor of composting toilet systems. Agents for Sunmar composting toilet systems.

SOILTECH (Agent)
607 East Canal St, Newcomerstown, Ohio, 43832-1207, USA
Phone: 1 614 498 5929
Email: soiltech@tusco.net
Website: http://web.tusco.net/soiltech
Contact: Kevin Mills; Distributors of Biolet composting toilets. Also have related products including a mulch starter.

SOLAR COMPOSTING ADVANCED TOILETS (S.C.A.T.)
Larry Warnberg, PO Box 43, Nahcotta, WA 98637, USA
Phone: 360-665-2926
Email: warnberg@pacifier.com
The Solar Composting Advanced Toilet - S.C.A.T. - is a freestanding complete toilet facility designed to recycle human excrement and urine into a relatively dry and deodorized compost which can be safely and easily applied to the immediately surrounding landscape. The S.C.A.T. is suitable for recreational campsites, vacation cabins, construction sites, agricultural and nursery settings.

SUN-MAR CORPORATION
600 Main St., Tonawanda, NY 14150-0888 USA
For a Free Catalogue Call: 1 800 461 2461
Email: compost@sun-mar.com
Website: http://www.sun-mar.com

SUPER TOILETS USA
John Flaherty, 10 Seaside Place, Norwalk, CT 06855 USA
Phone/Fax: 203-831-9810

OWNER BUILT

APPALACHIA SCIENCE IN THE PUBLIC INTEREST
50 Lair St., Mt. Vernon, KY 40456 USA
Phone: 606 256 0077 (main office)
Fax: 606 256 2779
Email: aspi@kih.net
Website: http://www.kih.net/aspi
Contact: Jack Kiefer
ASPI has technical bulletins on composting toilets and constructed wetlands including schematics for a compost toilet which ASPI designed, and for a constructed wetland.

BIG BATCH COMPOSTING TOILET EKAT (East Kentucky Appropriate Technologies)
Executive Director, 150 Gravel Lick Branch Road Dreyfus, KY 40385, USA
Phone: 606 986-6146
Contact: Robert J. Fairchild
Another owner-build system that utilizes readily available materials. It is designed around a large rolling polyethylene dump cart with air pipes of PVC placed into it. Two are used, one 'resting' while the other is filled. EKAT is a non-profit organization which provides engineering assistance with appropriate technology projects to families and groups in central Appalachia. The 'Big batch composting toilet' plans are $7.

ECO-TECH/VERA ECOS, INC.
P.O. Box 1313, Concord, MA 01742-1313 USA
Phone: 978-369-3951
Fax: 978-369-2484
Email: watercon@igc.org
Website: http://www.ecologicalengineering.com
Plans for site-built composting toilets (see previous US listing).

ELEMENTAL SOLUTIONS
Oaklands Park, Newnham-on-Severn Gloucestershire, GL14 1EF, UK
Phone: 01594 516063
Fax: 01594 516821
Email: mark.es@aecb.net
Contact: Mark Moodie
Kits include plans of the chamber recommended for a domestic situation in the UK climate. Includes ceramic pedestal, internal fittings of the tank, water proof 12V or 230V fan (uses ~3W) and power supply where necessary, construction and maintenance manual.

GARRY SCOTT COMPOST TOILET SYSTEMS
Mullumbimby NSW, 2482, Australia
Phone/Fax: 61 2 6684 3468
Email: compost@mullum.com.au
Ownerbuilder assistance with consultation, components, plans and books.

LONG BRANCH ENVIRONMENTAL EDUCATION CENTER
Big Sandy Mush Creek; POB 369; Leicester, NC 28748 USA
Contact: Paul Gallimore, Director
Phone: 828-683-3662
Fax: 828-683-9211
Email: paulg@buncombe.main.nc.us
Website: http://main.nc.us/LBEEC

SOLAR COMPOSTING ADVANCED TOILET (S.C.A.T.)
Larry Warnberg, PO Box 43, Nahcotta, WA 98637, USA
Phone: 360 665 2926
Email: warnberg@pacifier.com
Solar composting toilet plans (see previous US listing)

STAN SLAUGHTER 55 GALLON DRUM COMPOST TOILET - GUIDEBOOK AND PLANS
Stan Slaughter, Tall Oak Productions, Pilar Route, Box 11B, Embudo, NM 87531, USA
Phone: 888 484 4477
Fax: 505 758 0201
Website: http://www.stanslaughter.com
Also has a great audio tape: Rot N' Roll. Offers music/educational programs and a new card game, "Compost Gin."

"SUNNY JOHN" SOLAR MOLDERING TOILET CONSTRUCTION PLANS - $20/POSTPAID
John Cruickshank, 5569 North County Road 29, Loveland CO 80538
Email: hobbithouse@compuserve.com
Website: http://ourworld.compuserve.com/homepages/hobbithouse

INTERNET LINKS

EARTHWISE PUBLICATIONS
High Walk House, Kirkby Malzeard, Ripon HG4 3RY England
Phone + 44 01765 658786
Fax on request.
Email: earthwise@earthwise.nwnet.co.uk

World of Composting Toilets: http://www.compostingtoilet.org


Humanure Forum: http://www.oldgrowth.org/compost/forum_humanure1

Canadian Composting Toilet Website:
http://www.cityfarmer.org/comptoilet64.html#toilet

Composting council: http://www.compostingcouncil.or
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