

Vertecology BeeGrid Business Plan

Business Description and Vision

This plan is specific to the Mason BeeGrid subdivision of Vertecology.

- Mission statement (business purpose).
 - The BeeGrid subdivision exists to tool and promote the rise of the *BeeGrid*, a distributed network of well-designed small scale mason bee habitats maintained by private urban, suburban and rural inhabitants. The subdivision provides plans, instructions, information and resources to enable ecologically minded makers, do-it-yourselfers and ecological garden practitioners of reasonable skill to easily purchase or build and install BeeCubes, enjoy the many ecological, financial, social and spiritual benefits of mason beekeeping through their use, and share information and innovations in regard to their BeeCubes with other participants in the BeeGrid.
 - Through the participation in the BeeGrid, customers get to participate in a movement that lays part of the groundwork within every municipality for the emergence of a *Pangaea Food Forest* that will eventually transcend property lines and transform capitalism as it comes to yield free and abundant clean water, food, energy, land commons, social, spiritual, knowledge and financial capital and most importantly abundant *free time* for all through restorative ecosystem services that will need only minimal, well-conceived human guidance to flow.
- Company vision (statement about company growth).
 - The BeeGrid subdivision will provide the following products;
 - Bee habitats that will be manufactured and sold
 - Bee habitat plans, designs and patterns that will be sold online that support makers with reasonable skill in building them easily.
 - Bee habitat plans, designs, instructions and CNC codes/files that will be sold online to support makers and fablab users in building and installing them easily.
 - Information regarding how and where to install bee habitats for optimum function and how to maintain and care for them.
 - Information regarding how to get accessories for bee habitat building, care and maintenance that can't be gotten from Vertecology.
 - Information regarding the general ecological range of mason bees.
 - Information regarding the ecological, social and financial value of keeping mason bees.
 - Access to posting via twitter feed on the Vertecology LLC site (www.vertecology.com) regarding innovations, results and other relevant information from participants in the BeeGrid.
- Business goals and objectives.
 - Current goals:
 - The BeeGrid page on Vertecology LLC will become one of the top 5 resources for information on mason bees online by October 2013. This will add a new dimension to the Vertecology online ecosystem and

enhance the financial yield of all Vertecology LLC's offerings as well as establish a low-price and easy-entry way for prosumers to participate in Vertecology LLC's product/information ecosystem.

- Though the sale of BeeCube kits and prototypes (price point \$50) will lead in the beginning, eventually the sale of online information, designs and plans will overtake the sale of kits. Price point for the sale of non-commercial build licenses is considered at \$5.
 - Eventually Vertecology LLC will acquire CNC milling and/or Laser Cutting equipment, and will continue to produce artful BeeCubes for shipment (price point \$50+). Sales can be worldwide, and so it's difficult to project exactly where they will "take off" first. Considering the range of mason Bees is generally in the cooler climates, the optimum, eco-minded region for their sale currently appears to be the Pacific Northwest. The first financial target is 10 sales (2 prototypes and 20 downloads) for the month of October 2012, most likely in Oregon, where Mark is residing as of this writing.
 - The BeeCube will become a highly accessible product which will build a financial, social and knowledge foundation that will support the continuing development of Vertecology LLC's larger and more exclusive offerings, to include Hanging Gardens, rain harvesting systems, design consulting, festival installations and offerings yet to be conceived.
 - Mason bees become active as early as March. We anticipate that sales of plans, designs and BeeCube kits will be largely seasonal, with most sales occurring from February through September, but that sales may continue year round to some extent. Thus we hope to achieve \$3,000/month in revenue for the BeeCube division by March 2013 and maintain that as an average for the foreseeable future beyond.
 - We consider that the sale of plans will generate \$1,500 in monthly sales, amounting to an average of 300 downloads/month or 10/day.
 - We also consider that 30 bee habitats or kits will be sold per month (average 1 per day), generating revenues of \$1,500/month. Initial sales will be from the shipping of physical habitats. The initial manufacture of habitats will result in significant improvements over time as prototyping continues; the filming of the process and testing by Mark will yield online video, information and an online info base (youTube, Vimeo, Ehow, Skillshare) from which to launch the selling of plans, designs and code later.
- Brief history of the business.
 - As of this writing, Vertecology LLC is one year old; the BeeGrid unofficial "subdivision" is newly formed. First prototypes of the BeeCube have been built, with designs prepared for CNC manufacture.
 - In Vertecology's initial year, Mark has aggressively leveraged his water catchment installations, patent pending platonic geometry inspired hanging garden systems, and geodesic festival installations and multidimensional presentation skills including film-making, blogging and social networking to establish a considerable web presence, which he has been additionally able

to augment by connecting into and promoting an expansive network of like-minded businesses including O2 Treehouse, Pacific Domes, Bee Haven International (which will partner with Vertecology LLC on the promotion of BeeCubes), Living Mandala, Lumen Nature and others.

- As of this writing, Vertecology LLC has had earnings in the range of about \$4,000:
 - Hanging Gardens: \$950.
 - Custom garden and trade show installations: \$1150.
 - Geodesic Art Installations: \$100.
- And as of this writing Vertecology owns the following assests:
 - Geodesic Sphere and designs, the Hanging Garden subdivision including provisional patent and related online media, the BeeCube subdivision, and the water harvesting subdivision including substantial online media with a viewer base of over 20,000, as well as the www.vertecology.com site and blog, facebook page and twitter feed.
- List of key company principals.
 - Mark Scott Lavin, Principal.
 - We will also be working closely with BeeHaven International, with Laura Ferguson as Principal and potentially with Pacific Domes, with Asha Deliverance as Principal.

Definition of the Market

- Describe your business industry and outlook.

Here are some general trends to consider in regard to the launch of the BeeGrid subdivision:

- *Permaculture is coming.* Mainstream culture is going green as people become more aware that human well being is entangled with the global ecology. The logical endpoint of this awareness is the commitment by great numbers of people to the Permaculture Principles and disengagement from financial, cultural, corporate and government structures whose operations go against those principles. People are going to want to learn to grow their own food, claim and recycle their own water, share resources and technology, and decentralize manufacturing. Many urbanites are going to want to do so without losing the aesthetic, style and chic that comes with living in the city. They're going to want to do permaculture, but do it beautifully. While economic instability is here and remains on the horizon, and has many industries sitting scared on their capital at best, this uncertainty is actually good for the so-far unsaid "permaculture sector." As people dive into permaculture, they will become less dependent on money in the long term and carve out an economic polyculture with diverse means of exchange. In the short term, they will spend money to enhance their ability to transition from consumers to producers. This is great for Vertecology LLC's bottom line.
- There are already signs of this happening, notable in the proliferation of gardening magazines and permaculture gatherings around the West, and in the

permaculture-infused mood of the recent protest movements. When the youth get tired of yelling, they will start planting, even if they don't want to give up their iPhones.

- Colony Collapse Disorder effecting bees that live in colonies will soon be bringing the mason bees into clear focus as an alternative that can help sustain flowering plant biodiversity and bring new resilience to ecosystems and gardens now dependent on colonizing bees. Once people become aware of mason bees as an alternative, they will also happily discover their other qualities, especially that they don't sting and are 20x more effective at pollination than honeybees, which will yield far more abundant gardens. The fact that they don't sting will make them especially opportune for children to work with and learn from. Major opportunities to work with the educational sector will follow.
- One opportunity for Vertecology LLC to sell bee habitat plans is to schools. Teachers can buy "educational packages" which students can build. This will become especially opportune as the burgeoning school-community garden movement matures; principal Mark has made many contacts in the Los Angeles area while volunteering within this movement. Though Los Angeles is not in the mason bee range, the furious expansion of the movement in Los Angeles in 2010-12 is not unique.
- Another trend, seemingly at odds with permaculture but perhaps not at all is the fablab movement. Essentially a fablab is a garage scale factory. Miniature manufacturing technology is becoming more affordable, following in the footsteps of personal computers and smartphones. Within 10 years, it may be quite commonplace for students and hobbyists to have miniaturized CNC milling machines, 3D printers and laser cutters at their immediate disposal either personally or through schools, coops or other neighborhood level institutions. People will be making tools where once we purchased them from large distributors like Home Depot. Vertecology LLC in general and the beeGrid subdivision specifically stand to leap into this trend, providing low cost digital means for makers and DIYers to create their own bee habitats (and other constructions including our Hanging Gardens). We are predicting that the permaculture and fablab trends will merge in coming years into an intrepid culture of mechanically, technologically, artistically and ecologically savvy makers unbounded by the current financial and corporate institutions now defining our world. These will be our most loyal customers.
- Define the critical needs of your perceived or existing market.
 - First and foremost, bees. The honeybees are not doing well these days, affected by climate change and colony collapse disorder. In the cities, there is the added challenge that bees, though essential to the fruiting of gardens and trees, are considered pests by the mainstream due to their stinging. Pets and bees especially don't get along. Mason bees, non-stinging are a great alternative.
 - Also of critical importance is information. People need to know that mason bees are a viable alternative, and that they do not need a degree in beekeeping to take advantage of them.

- Finally people in the market don't have a lot of time. Harried by work and other necessities of life, they want us to do the thinking and work for them. They want something they can put in their yard, or an easy lesson they can give to their kids. They don't want to do the research. They want to use our knowledge. They want to go to a web site that tells them exactly what to do and how to do it in an easy, readable, fun way. We will also provide links for customers to order bees from.
- By providing habitats, information about how to install, use and care for them and the context for using them (education, etc), we will be providing a way for clients to naturally attract the bees into their gardens. Highly productive gardens with good, cared for habitats will attract the bees.
- Identify your target market.
 - The target market consists of ecological gardeners and small-scale organic farmers who are also tech savvy (know how to use a computer, order a design, etc.). Within this segment we are especially interested in parents, educators, do-it-yourselfers and fablab oriented makers with reasonable carpentry and gardening skills. Mostly we are targeting the Pacific Northwest. Most of our customers will own their land or will be long-term, committed renters or cooperative housing participants.
- Describe what share of the market you currently have and/or anticipate.
 - Currently we have no market share, and there appears to be nobody with a major share. Some garden supply places may have lines of bee habitats, but considering that this is a currently very specialty item and these major lines are looked on with suspicion by our target customers, we expect little threat from them. The greatest challenge is getting noticed above the many local artisans who produce bee habitats and sell them online. Our unique "make it yourself" approach may be the winning ticket that gains us loyalty in time. Our other advantage will be the BeeGrid concept, which will in time make mason beekeepers aware of themselves as a global community, participants in a global ecological project. Even if they purchase bee habitats from a competitor or derive them on their own, we hope eventually to establish an online presence within which they can participate and thus participate in the Vertecology LLC brand. This will help monetize Vertecology's other offerings.
 - We also have potentially 100% market in the Ashland Oregon area. A very small market, but one potentially very lucrative considering that it is surrounded by organic farms and that we are working with BeeHaven International, whose principal and proponent, Laura Ferguson is locally famous as the "bee lady."

Description of Products and Services

BeeGrid subdivision products and services:

- Bee habitats that will be manufactured and sold (online order ~\$50)
- 3D-Models, Plans, designs, patterns and installation, use and care info for easy-build habitats (online download ~\$5).
- CNC-ready files with assembly, installation, use and care info (online download ~\$10).

- Information regarding how and where to install bee habitats for optimum function and how to maintain and care for them (free online with additional details provided with downloads).
- Online information (free online with more details available at download):
 - Links to accessories for bee habitat building, care and maintenance that can't be gotten from Vertecology
 - Map of the general ecological range of mason bees
 - Info regarding the ecological, social and financial value of keeping mason bees
- Participation
 - Twitter feed on the Vertecology LLC site (www.vertecology.com) regarding innovations, results and other relevant information from participants in the BeeGrid (participation free).
 - Eventually – a live map of the BeeGrid uploaded from participants. Beyond the scope of the current plan.
- We intend to achieve competitiveness through the following avenues:
 - Provision of clean, elegant and easy to use plans, patterns, instructions and information. Clean and one-stop presentation of information on how to build, place and care for bee habitats is in itself unique; most information out there currently is very amateurish and must be cobbled together from multiple sources.
 - Superior products
 - Development of a “beeCube Observer” version that brings together the best design elements of various nests already in use.
 - Product quality *and* affordability. Our greatest competitors will be the DIYers who will drill a few holes in a piece of wood in the garden. For a few dollars, these people will get to have access to great looking plans, bee habitats that they can reuse year after year and something artistic to share and show.
 - The Vertecology aesthetic. Clean lines and an attention to design in affordable products that are easy and fun to make, assemble, use and care for.
 - Immediate “control” of the Ashland market through the reputation of Laura “Bee” Ferguson and BeeHaven International and Pacific Domes. Leveraging these resources will give us a foothold in other locations.
 - Opportunity to participate even if you buy from a competitor or bring out your own design. Eventually the online “beeGrid” will map the actual “beeGrid.” It will become a contextual experience, the experience of being part of an ecological regeneration movement.
- **Product Photos & Plans – Appendix A**

Organization and Management

- Provide a description of how your company is organized as well as an organization chart, if available.
 - Currently Vertecology LLC is organized as a California LLC at the official address of 22742 Brandywine Drive, Calabasas, CA managed by the principal, Mark Scott Lavin. For the foreseeable duration of this plan, the BeeGrid

subdivision will remain an unofficial “subdivision” and shall be under the direction of Mark Scott Lavin. The BeeGrid subdivision under the name Vertecology LLC will supply the products and services, and will work in partnership with BeeHaven International, which initially will purchase many of the physical products.

- Vertecology LLC overall is still emerging as a corporate entity and for the foreseeable future will be wholly operated by the principal. As expansion warrants, the principal will take the role of lead designer and contract out the manufacturing, shipping and potentially installation of product. On an as-needed basis, a bookkeeper will be hired. Eventually there may be a need for hiring of employees as to staff operations as prototyping comes in-house – that will be done as the organization achieves financial benchmarks and the acquisition of milling and manufacturing equipment becomes possible.
- Identify necessary or special licenses and/or permits your business operates with.
 - Currently Vertecology LLC operates with no licenses/permits. The BeeGrid subdivision, as an entirely online venture will require no licenses/permits, though there may be need in the future for Vertecology LLC to acquire architectural, landscape, contractor and local business licenses as larger scale installations are taken on. Such licenses will be acquired on an as needed basis in the states and municipalities in which we do business.
- Provide a brief bio description of key managers within the company.
 - Prior to founding Vertecology LLC, principal Mark Scott Lavin obtained a BFA in Fine Art from UCLA and a Masters Degree in architecture from SCI-Arc with a special interest in ecologically regenerative infrastructure. In 2006 Mark served on the core team that created Los Angeles’ award winning water-management plan which integrated permaculture principles into the hundred year vision for the county while integrating the disparate visions and interests of 1,400 stakeholder groups representing a broad spectrum of Los Angeles County agencies, residents, interest and recreational groups, activists and businesses. After graduation, Mark worked with several natural build enterprises, most notably O2 Treehouse, one of the most innovative tree house builders in the world, where he directly collaborated with principal Dustin Feider on conceptual, schematic and construction design and served on construction crews as well. In Vertecology’s initial year, Mark has aggressively leveraged his water catchment installations, patent pending hanging garden systems, and geodesic festival installations and multidimensional presentation skills including film-making, blogging and social networking to establish a considerable web presence, which he has been additionally been able to augment by connecting into and promoting an expansive network of like-minded businesses including O2 Treehouse, Pacific Domes, Bee Haven International (which will partner with Vertecology LLC on the promotion of BeeCubes), Living Mandala, Lumen Nature and others.

Marketing and Sales Strategy

- Our market and the demand is for our products & services:

- As mentioned above, permaculture is coming, and so is the age of distributed manufacturing. Our ideal customer is a do-it-yourselfer with reasonable carpentry skill and a passion for subsistence gardening. The ideal customer lives in the city or suburbs and has enough space for a small garden or access to a community garden with a variety of flowering, edible plants. The ideal customer lives within the ecological range of the mason bee, especially in the Pacific Northwest. Traditional beekeeping (honeybees) is a specialized skill best left to professionals with considerable skill and experience, and currently honeybee populations are unstable due to Colony Collapse Disorder. The average gardener wants to leave the bees to the birds per se. Demand for an easy bee keeping alternative involving bees that find well-concieved nests on their own, that do not sting, that are not susceptible to CCD, that add a level of ecological redundancy that will support the robustness of the entire garden ecology and that have 20x the pollinating effectiveness of honeybees is going to be quite high once the word is out. We cannot at this time give exact numbers, but the proliferation of garden magazines in the Pacific Northwest and a growing culture of do-it-yourself gardening in Portland and San Francisco attest to a considerable potential demand.
- Of particular interest are school teachers who can in the future teach students to assemble bee habitats and place them in school community gardens.
- Our channels of distribution:
 - The primary channels of distribution for BeeGrid products services and information shall be:
 - The Vertecology website (www.vertecology.com) BeeGrid page
 - Products purchased by BeeHaven International and sold through the BeeHaven International website
 - Potential sales through the Pacific Domes website as well as other future affiliations
 - Potentially third party platforms such as www.etsy.com and the Facebook Marketplace.
- Our sales strategy, specific to pricing, promotion, products and place (4Ps).
 - The sales engine is an “ecosystem” of the following online “nodes” which will drive traffic down the list as a “funnel”:
 - How-to video that will be posted on YouTube, eHow and Vimeo; existing properties (Hanging Garden fundraiser, water catchment (20,000 Youtube hits in 8 months as of this writing and LA Decom Geo 2011) as well as “BeeCube the Making of”
 - The Vertecology facebook page.
 - The personal social network pages of Vertecology principal Mark Scott Lavin
 - The BeeHaven International web and Facebook pages (where purchase may be possible)
 - Potentially the Pacific Domes website and Facebook pages (where purchase may be possible)
 - Potentially third party sites like www.etsy.com
 - Potentially the @beegrid twitter feed.

- Potentially skillshare offerings (\$20/session) that teach users to build bee habitats.
- The BeeGrid page at Vertecology.com (where purchase will be possible). This will be an information rich site that will draw users for its content even if they do not purchase.
- Periodically sales may come from other places, for instance students learning at school speaking with their gardener parents. In addition, it may be wise as it becomes affordable to take out ads in gardening magazines with large readerships in the Pacific Northwest.
- Periodically, principal Mark Scott Lavin will come forth with new designs. These will be promoted through the above channels.
- We will additionally promote BeeGrid products by offering them as gifts to donors for other initiatives including the Hanging Garden fundraiser and the launch of BeeHaven International.
- We will take advantage of high-profile opportunities to place functional showpieces in places like public gardens, community food gardens and school gardens (working with and targeting school teachers and parents).
- Pricing – we are targeting a median \$50 price point for manufactured pieces, \$5 for easy-build plans and \$10 for CNC-ready plans. The \$50 represents an affordable price for a quality product. The \$5 plan price represents a small commitment for quality information. And the \$10 price represents an affordable but substantial enough price to make some money for the efforts in a specialized field.

Financial Management

- Estimate of start-up costs (beeGrid subdivision only).
 - First Round website upgrades 10 principal hours @ \$40/hr
 - Second Round website upgrades (integration with wordpress.org) - \$3000
 - Design of first round prototypes – 40 principal @ \$40/hr
 - Production of 10 first round prototypes - \$200 + labor - 60 principal hours @ \$20/hr
 - Acquisition of precision tools
 - Drillpress - \$150
 - 2012 tax year (\$800 for all of Vertecology LLC) by 4/15/13
 - Principal hours devoted to materials sourcing, operations management, etc. 100 over the year @ \$40/hr
- Projected balance sheet (1 year forward).
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- Projected income statement (1 year forward).
- Projected cash flow statement (12 months forward).