



LIVING BUILDINGS

LIVING CEMENT

BIO ACTIVE BUILDING MATERIALS

NON-DESTRUCTIVE COOLING

WATER MANAGEMENT

GROWING DESERT WALLS: sands to rock

ADVANCED BIO TECH

FULL SPECTRUM BIO-ARCHITECTURE

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Introduction.

You do not need to look further for the team and technology you need for your project. Unique to our approach, unlike many others in the sustainable movement, is a deep understanding of what makes life possible in the first place, a unified field theory we refer to as the “Fractal Field”, the phase conjugate electrical and magnetic life designs that nature has adapted through ratio, proportions, harmonics, frequencies and resonances. A core philosophy and theory to our understanding is the Golden Ratio Principle, which all of Nature and Universal Forces use to grow, attract, store and distribute ‘charge’. Charge is a scientific term that can be measured and validated. The principle concept is there is a fundamental electro-magnetic field geometry, which supports and creates life referred to as the fractal or phase conjugate field. This is called a bioactive electric field. We know the symmetry, frequency recipes and resin sizes to make capacitors (electric fields), and building materials, which are fractal and thus cause growth and increase metabolic rates dramatically.

This can be applied to architecture, agriculture, building materials and the development of many biotech’s.

Our designs and materials increase longevity, health and fertility. They represent an economical and efficient way to building sustainable beautiful communities, including in some of the most arid regions of the world.

The following pages are details of living cement, building materials, growing living desert walls, non-destructive air conditioning, and full spectrum bio-architecture. Budget and logistics will be discussed in follow up emails.

Definitions

Bio-Architecture is a new science of LIFE FORCE in buildings, based on how a building makes and generates the required FRACTAL FIELD. It is a revolution in urban design and community planning. Understanding the geometrical patterns, fractality and mathematical proportions that create life in order to build and design with, has been largely forgotten in the world. We now have dead and sick buildings, that block our potentials. By understanding the symmetry of electric fields causing health versus disease we discover that an overwhelming simple and yet compelling rule or pattern emerges. Applying this beautiful algorithm to Architecture, we can see exactly why the design of living space must be exactly that - an electrically living space. An electrically alive space (sometimes called 'sacred') is simply the space where charge/energy can breathe efficiently and thus achieve the multiply connected / holographic and fractal-distributed resonance called awareness - the thrust of all living systems.

Sacred Geometry is the study and practice of the pure principle set of operations that underpin all natural expressions and processes. In ancient times, this knowledge was considered vital, (quite literally) if one wished to create a truly sacred life within a sustainable community.

In its larger application, it is used for Education and Peace making, and the creation of **Flourishing Cities**, or as we like to call them "**Light Cities**" which are Ultra Designed Urban Environments that remap magnetics like a "Rose" which is a process of adjusting and designing the magnetic map of a city / community to be a "Fractal Attractor" to attract life force, health, commerce, tourists, and money.

Bio Active means a living bio field that generates life force and charge / voltage / implosion. We discovered that in air just like in water; when the electric symmetry is fractal and phase conjugate all the LIFE FORCE energy will be massively optimized. This is the physics behind electric fields that help seeds to germinate and can reduce aging and pain, creates efficient storage of food and enables us to build efficient dwellings that need no mechanical air-cooling.

We have all known and felt live air versus dead air, yet few have done the electrical engineering to measure the difference- and produce the field effect we KNOW is powerful in sacred ancient temples and churches, pristine parts of nature, or any "sacred space".

Phase conjugation enables special spatial designs to minimize inertia of all sorts. Phase conjugation can reduce inertia in heat transfer systems, inertia in chemical reactions, inertia in human health or healing of disease, inertia in mass transfer, phase transfer (crystallization, evaporation, condensation) and so on.

- Perfect IMPLOSIVE charge **CREATES COOLNESS - AND - HOLDS LIFE FORCE.**

Because a fractal signifies infinite compression, it is what spans the gap between the symmetries of the very small and the very large. Fractals exhibit self-similarity, meaning their inner structure has the same pattern as their outer structure (like a pine cone or a fern tree and why we often use the metaphor of a rose flower). Just as fractality describes the geometry of waves of energy or charge, fractals manifest as wave patterns that evolve ad infinitum – like an encoded thread linking larger spirals to infinitely smaller ones. Fractal phase conjugation perfects coherence, thereby producing real time hologram like characteristics: "everywhere at once properties" which is the most cutting edge concept in modern day quantum physics with its theories of 'entanglement' and elemental spontaneous reactions.

LIVING CEMENT

Our techniques for producing bioactive fields, enhances the trace mineral content of certain ceramic and clay materials. These are then added to our unique cement mix. When the capacitive quality of cement, ceramic or glass is adjusted with simple accurate piezoelectric, paramagnetic, and dielectric powder inclusions, the result is a material which actually by itself produces an active growth accelerating capacitive electric field!

So creating a building, which has the ALIVE feeling, has never been easier if you combine the right electrical engineering skill and measurement- with bio architecture sacred geometry full spectrum concrete design. Of course, limestone bioactive cement blocks can be molded in various shapes and sizes and can be made on site

There are 2 key requirements to making a cement installation, which creates its own growth accelerating field effect:

1. Accurate rock powders and dielectrics (like barium titanate) must be added to the concrete mix during fabrication- depending on the dielectric and paramagnetic quality of the available sand being used. Then the field effect resulting is measured to optimize for the desired bioactive 'phase conjugate dielectric' quality. Effectively the field effect of the cement is carefully created to be CENTRIPETAL and therefore bioactive.
2. It is also necessary to replace all or most of the steel or other metal rebar material in the cement designs with alternatives like - bamboo, plastic, or carbon fibre rebar and our extruded rock process-see below (which DO meet code in most areas).

Our superior concrete requires no kilns to manufacture. It is a simple paddle mix of our catalyst and other natural materials to create a concrete product which tests over 4,000 psi for our grey equivalent to Portland Grey and over 5,000 psi for a Portland equivalent for white Portland. Our concrete has 3 times the tensile and compressive strength of Portland and has a near zero coefficient of expansion. It is Acid, alkali, and water retardant. It can withstand over 6000 degrees without any fumes or explosive characteristic, which Portland has.

A natural alternative to steel or iron is formed from extruded rock or stone and mixed with our partner's proprietary formulae. This can form a lightweight replacement for I- beams, rebar, window frames etc. It will not rust and is as strong or stronger than steel without the steel downsides. No large kilns or the burning of fossil fuels is needed to manufacture this steel like product.

Also we can produce low cost granite like beautiful material that is one half the cost of actual marble and granite, and has all of the great qualities of our concrete. Will not burn or crack, is made of all natural occurring material, resists acid or alkali, can be poured into a mold for any shape of thickness you want.

Community roads: A total alternative to petroleum based asphalt road material. It looks like asphalt, but it is green, less expensive, and will last a minimum of 5 times longer than petroleum based asphalt.

Other examples:

- **Rock sands piezo calcite quartz:** A small amount of this special mixture of stone powders (highly charged white sand) is added to the mix of cement.
- **Using mineral soluble colloid carbon bio-char** because Carbon can approach dodec / icos symmetry and therefore become bio-active

LIVING BIO ACTIVE INTELLIGENT BUILDING MATERIALS

In our Bloom the Desert project we have used bacterial strains that make “intelligent construction materials.” In other words, building materials that are self-cleaning, neutralize pollutants, and repair themselves when they crack. The same technology can be used for building walls, dwellings and roads and securing foundations in areas that have sandy loamy soils. We can turn sand into rock!

This spawns ideal ways for infrastructure development in arid and desert areas. This technology is now ready for practical application. Projects have already achieved using sandstone walls for the desert and using hemp bricks. Using the *Bacillus Pasteurii* we can create living walls from the desert sand and integrate them into our dwelling designs as well as to stop desertification

Our microbes have the ability to produce a cementing agent (dubbed “bio cement”) that would bind sand particles together, forming rock. The bacterium has an enzyme that enables it, in the right circumstances, to do just that. With these microbe generated enzymes and hydrolysis occurs in a calcium-rich environment, it generates binding calcite cement (calcium carbonate) as a by-product. The bacterium treatment altered the consistency of sand, making soft sand harder, even changing it into a substance as hard as marble. This also has applications in mining in the desert sands because as you drill tunnels the sand can be made harder so it does not cave in.

*Upon touching sand, may it turn to gold”
Anon. (Greek proverb)*



The Chinese created the strongest calcium bond in the world by making a mortar from sticky rice and calcium. Bulldozers could not knock over 5000 year old tombs that were built with that mortar. The Pectin in the sticky rice makes a smaller calcium bond. We have a silica-based formula that will be as light as styrofoam and as strong as marble

Using opal dirt we can make synthetic opal walls using the *Bacillus* in conjunction silica dioxide and opal dirt and produce a type of opal/marble building material that would be alive. We would make some beautiful floors!

Wonderful things can also be done with bamboo roofing these days. Also truss can be made from layered bamboo and then clamped using the sticky rice mortar that is super sturdy. Garnet sand, Diamond dust, quartz flour is just a few of the mediums that can also be used.

PLANT materials in a matrix form:

Bricks using shredded hemp with alkali binders are great (sets in about 1 month with no cement). You can also incorporate silica fume into the mix. Can also use a mix of bamboo and hemp, or just 100% bamboo. Bamboo is amazing in a wall.

Cooling (Non destructive cooling and air conditioning systems.)

- 1 Permaculture designed dwelling set into the natural cool airflows and capturing cross breezes
- 2 Use of shading from strategically planted trees
- 3 Use of water flows to cool breezes before entering the dwelling
- 4 Use of golden mean bio active building materials which have non-destructive interference-which produce an internal “cool” breeze, including using living cement and other earth friendly materials
- 5 Use of ponds and ‘radiator’ pipes inserted into walls of dwelling to draw out heat
- 6 Inserted desalination water vapor inside walls

Natural refrigeration systems, our own cooling system included, uses evaporative cooling to do the job. There are also biological systems that can produce cooling down to 10 degrees C, but not much lower than that. This is enough for refrigeration. How do we accomplish this? Walls that use capillary action with an underground water source and wind use an evaporative cooling system, as do water bags out of semipermeable leather. Both have been used for centuries. Amphora jugs that allow for a small amount of water to wick through cool the water inside the jug through evaporative cooling. They are very traditional and low-tech in nature.

Advanced Bio Techs

Bone—The New Steel

For compressive loading, nothing beats the strength of bone. When engineers were asked to come up with a material to replace the strength of a horse leg bone, they were hard pressed, and the composite that they found had much the same properties of the original bone. Metal simply would not do it. For our biological replacement to mechanical systems, bone would be used, and vehicles would have an exoskeleton of bone and chitin instead of steel that would regenerate if damaged, fed by its internal blood supply. Thus, vehicles would heal over time, and last for generations. Buildings would heal if damaged by fire or earthquake, and slough off damaged tissue.

Crystalline Lens Tissue—The New Glass

What do we do about glass? It turns out that the F stop rating for the material inside our eyes are better than the best Zeiss lenses as far as transparency is concerned, and it regenerates as needed. This will be our new window glass. Different strengths can be engineered as needed depending on the application and working environment.

Lighting

Bioluminescence has been known for decades, and most recently a tobacco plant has been engineered to produce luciferin and luciferase, the two components of fireflies that produce the familiar bright flickering light which they use for attracting a mate. This was keyed in the plant to oxygen metabolism, which plants use at night when photosynthesis is not available. As a consequence the plant “lights up” at night. The same can be used for bio-lamps: lighting fixtures used filled with bioluminescent algae for illuminating the home at night.

Fiber optics

Fiber optics has been thought of only in the context of signal transmission, though it is far more versatile than that. Optical fiber, typically quartz glass doped with various materials and a specific manufacturing technique, is used in the transport of infrared, visible light, and ultraviolet energies. Radio waves as well as X-ray and gamma go right through it, so it is very specific in what it can conduct.

However, with these limitations in mind, one can still find many uses for this technology. In a building in Japan, lenses concentrated solar energy onto fiber optic bundles, where this light was transported into a basement where tomatoes were grown to show that this could be done. In fact, optical fiber has been shown to be 3 times as conductive as copper in ergs per cubic centimeter. The phenomenon of conductivity is phonon or photon scattering, and in this case the percentage of scattering is extremely low.

Here are possible uses not limited to architectural:

- 1) Building lighting during the day using solar energy: In this application, assuming that there is no access to electricity, solar energy is piped into the structure using passive lens assemblies, and distributed throughout the building. Light switches are actually light switches, and have sliding mirror assemblies that allow one to attenuate the output, which act as dimmers.
- 2) Building lighting during day as well as night: In this one, we have a switch that enables the input to go from the external solar collector to a central quartz halogen tungsten lighting system. This one lamp goes to the central bundle, and mirrors on the switches route the light back to the central lighting system for distribution elsewhere if those are turned off. This also means that no additional heat is generated inside the room, as IR filters can be employed to prevent that from entering the room.
- 3) Building heating and lighting during the day: In this case, full-spectrum sunlight including infrared is directed into the living space. This enables heating the space without the need for heating water and pumping it around—a totally solid-state passive system for transporting energy.
- 4) Building heating and lighting during the day as well as night: In this embodiment, depending on the heating needed, tungsten halogen with additional infrared is piped into the living space after the sun sets with a switching arrangement to go from the collector to the central IR heating and full-spectrum lighting system.
- 5) Cooking using fiber optics: In this case, the solar energy is piped in and routed through a quartz crystal diffuser to a cooktop. The pans used have a flat black coating on the underside to absorb the energy. One can also have a lens assembly to collimate the energy from the top for broiling on the cooktop. The signatures of the output for cooking remain for the most part unchanged, and the healthy aspects of solar energy are infused into the cooked food.
- 6) Refrigeration using fiber optics: In this case, one uses an evaporative type cooling system, which today is used with gas-fired refrigeration systems. The infrared energy supplies the heat needed to run the cooling system inside the house, such as a refrigerator. On a larger scale, a rooftop evaporator unit can be used for cooling the interior of the building while the sun is up. The hotter the sun gets, the cooler the building gets in a synergistic system.
- 7) Saunas using fiber optic diffusers: In this application, the sauna can either use a filter to limit the output to the interior of the sauna to infrared only, or full-spectrum input can be used in the sauna without the short-wave UV, that being selectively filtered out or limited. Sun exposure is needed in the human system to manufacture vitamin D, and this is lacking in the winter months due to colder weather and skin covering. Solar saunas would tend to remedy this problem. In this case, the fiber optic fabric covers the beds as well as being piped in to the ceiling and walls for a more even distribution.
- 8) Pool heating and illumination using fiber optics: Currently, pool heating is accomplished with electrical heater, as is illumination. However, this application uses a totally natural source for both: the sun. This can either be hooked up to the central heating and lighting system, or stand-alone. The interior of the pool is lined with fiber optic fabric, and both infrared as well as visible light is piped in for the effect of swimming in a luminous pool of water. The infrared is scattered and absorbed by the water warming it, and the UV in the light acts as a bactericide.

Furthermore, lighting is not limited to quartz rods used as light guides. Here are some possible uses:

- 1) Diffuser panels on walls: In this embodiment, the fiber optic bundles are terminated in built-in wall panels to distribute the light. A titanium dioxide coating on the backside reflects the light into the room causing an appearance of the entire wall glowing.
- 2) Fiber optics integrated into wall draperies: In this embodiment, seen here: <http://www.lumigram.com/catalog/page6.php?osCsid=u5bnac1m4ljljvoo795104opa5> light can be used for illuminating fabric integrated into draperies as well as furniture.
- 3) Infrared fiber optics used in heating blankets and shower curtains: In this case, the infrared provides heating on cold days, and an added measure of safety in that there is no EMF for electrically sensitive people, and no fire hazard in accidental short circuits. In the shower curtains, the infrared not only radiates a gentle heat but also dries the curtain.
- 4) Fiber optics in smart clothing: In this application, the infrared source is used for heating in extremely cold climates for underwear that distributes the heat evenly with sensors that measure the temperature of the surface of the skin, and adjust the heat flow appropriately. Low level UV using UV light emitting diodes can be used in the clothing as well for vitamin D production in northern latitudes and in winter months.

With all these uses, it would appear that we have barely scratched the surface of the applications for this technology. It provides us with an ecologically sound alternative to fluorescent lighting that has mercury in its tubes that is difficult to manage and recycle, as well as a centralized heating and lighting system far more efficient than the one we currently have. A method is seen that transports solar energy directly from rooftop collectors into the interior of the building without conversion losses. The current system converts solar energy into electricity with an efficiency of 15%, and then that goes into reduced spectrum lighting with an 80% efficiency, with an overall efficiency of 12%. Only one eighth of the energy falling on the PV panel goes into the room below. With low-loss fiber optics, this figure is 98%.

Conclusion:

Biological alternatives exist for almost all mechanical systems. Instead of high-cost and high-maintenance manufactured architectures, grown systems are used for a replacement, which can heal when damaged thus enabling a cost savings over the present paradigm.

A living, holistic mindset will evolve through the use of this expertise, changing from a “dead” technology to one that reveres life. The reason that life is not respected at the moment is that our tech is evolving away from life and toward machines. Moving back toward living systems will result in a fundamental positive change in society—a new Renaissance respecting living systems that coexist in a larger biosphere where all beings, natural and artificial, breathe the same air.

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