

Quietlands Development Group Huajia Lake Eco Golf Community Huaibei China

Slide 1

Good morning. Thank you for joining us this morning. I am Gil Heinsohn of Quietlands Development Group. Quietlands Development Group is a non-profit think-tank of business men and scientists who have come together to solve problems. Our members consist of Liberals and Conservatives, Republicans and Democrats, world recognized Architects, Ecologists and Environmental Engineers. I am the “Darth Vader” of the group as I am a Real Estate Developer. Not all of the members send me Christmas cards each year. We have some special guests with us today; Governor Don Sundquist... And we have some very special guests with us today from China. I will now have my associate and Quietlands Member Yegang Wu introduce them and ask them to please stand when recognized. Quietlands development group has been working on this Eco golf community for our Chinese clients for the last five months As you enjoy this presentation I would hope that you would realize how important it is for America to take the lead in this initiative.

Slide 2

Last spring several of us attended the 2009 International Ecopolis Forum in Huaibie, China. We had a great time and the meetings were very informative. Our hosts in Huaibei were very gracious.

Slide 3

Quietlands member Dr. Lee Shugart was scheduled to give a presentation at the Forum to promote The University of Tennessee Switch Grass Program. Quietlands member and Architect Bob Swain spoke on re-developing Huaibei into an eco-city. I spoke on the dynamics of an eco-friendly golf course community. I must admit I was honored when the city of Huaibei solicited my assistance in developing what may be the first eco-golf course community in China.

Slide 4

Several years ago the Chinese and Singaporean governments joined efforts to develop the parameters for China’s first eco-city. Located in the City of Tainjin the plans for this future eco-city have been underway and many scientists, ecologists, engineers and architectural firms have been involved in its development. Through this and other international efforts, the definition of an eco-city has emerged and is now defined by a set of 26 Key Performance Indicators or (KPI’S). We have used these Key Performance Indicators for our guidelines in the development of the Huaibei eco-golf community.

Slide 5

Keep reading Key Performance Indicators

Ambient Air Quality: The air quality in the Eco-city should meet at least China's National Air Quality Grade II Standard for at least 310 days.

Quality of water bodies within the Eco-city: Water bodies in the Eco-city should meet Grade IV of China's latest national standards by 2020.

Quality of water from taps: Water from all taps should be potable.

Noise Pollution Levels: Noise levels must fully comply with China's standards for environmental noise in urban areas.

Carbon Emissions per Unit GDP: The carbon emission per unit GDP in the Eco-city should not exceed 150 tonne-C per US \$1 million.

Net Loss of Natural Wetlands: There should be no net loss of natural wetlands in the Eco-city.

Slide 6

Proportion of Green Buildings: All buildings in the Eco-city should meet green building standards.

Native Vegetation Index: At least 70% of the plant varieties in the Eco-city should be native plants/vegetation.

Per Capita Public Green Space: The public green space should be at least 12 square meters per person by 2013.

Slide 7

Per Capita Daily Water Consumption: The daily water consumption per day each person should not exceed 120 liters by 2013.

Per Capita Daily Domestic Waste Generation: The amount of domestic waste generated by each person should not exceed 0.8 kg by 2013.

Proportion of Green Trips: At least 90% of trips within Eco-city should be in the form of green trips by 2020.

Overall Recycling Rate: At least 60% of total waste should be recycled by 2013.

Access to Free Recreational and Sports Amenities: All resident areas in the Eco-city should have access to free recreational and sports amenities within a walking distance of 500m by 2013.

Waste Treatment: All hazardous and domestic waste in the Eco-city should be rendered non-toxic.

Barrier-Free Accessibility: The Eco-city should have 100% barrier-free access.

Service Network Coverage: The entire Eco-city will have access to key infrastructure services.

Proportion of Affordable Public Housing: At least 20% of housing in the Eco-city will be in the form of subsidized public housing by 2013

Slide 8

Usage of Renewable Energy: The proportion of energy utilized in the Eco-city which will be in the form of renewable energy, such as solar and geothermal energy, should be at least 20% by 2020.

Usage of Water from Non-Traditional Sources: At least 50% of the Eco-city's water supply will be from non-traditional sources such as desalination and recycled water by 2020.

Proportion of R&D Scientist and Engineers in the Eco-city Workforce: There should be at least 50 R&D scientists and engineers per 10,000 workforce in the Eco-city by 2020.

Employment-Housing Equilibrium Index: At least 50% of the employee residents in the Eco-city should be employed in the Eco-city by 2013.

Slide 9

Read off screen

Slide 10

Now that the scientists, politicians and ecologists had their turn in preparing KPIs it was time for the Real Estate developers to be recognized. Read 27 – 30 KPI Discuss example \$200 to 120 dollar energy bill credits by TVA. After all our discussion over Green Development one simple truth became very obvious – if the eco-city home did not make economic sense to the buyer it would probably never be purchased. Quietlands Development Group felt people should want to live in Green structures, but we realize when it is all said and done; it must be to home owner's economic interest to be Green. Additionally, once built can the developers sell one of these Green homes in this eco-community for a profit? Any engineer and architect firm can make a structure "Green". But the true challenge seems to be can you do it cost effectively and can you sell the final product in the market where it was built?

Slide 11

So now let's go to Huaibei and in particular to the location given to us to design China's first eco-golf course community. This is Huaijai Lake – it presently consists of 900 acres and fluctuates dramatically due to its shallow depth and seasonal use for agriculture irrigation. It is surrounded by mountains one of which needs a tremendous amount of restoration from the damages of mining. An example of this mountain is in the upper left side of the picture above the lake.

Slide 12

The lake is formed by a massive earthen dam with a roadway on top of the dam. This is a picture of the dam I took this spring with the lake at its lowest point.

Slide 13

Obviously the first thing we observed was the lake was not a living healthy lake. In fact, it could be more properly defined as a detention area that became a lake during seasonal rainfall and a large dry non-vegetative area during the dry season.

Slide 14

Our first order of business is to reduce the lake to a sustainable size and make it a year-round healthy lake. We re-designed the lake to 260 acres and lowered the depth 12 feet. We used this soil to raise the surrounding area so as to make it suitable for development. The blue area denotes the reconfigured lake. The orange area denotes the reclaimed land. Therefore we created the 640 acres of the future community area without using existing agriculture land.

Slide 15

From this reclaimed land we started developing the community. We added an eighteen hole golf course and riparian zones. The original lake in its present configuration is estimated to lose approximately 880 million gallons of water to evaporation. The new design only loses 250 million gallons to evaporation. This gives us a net gain of 630 million gallons of water. That would ultimately save enough water, along with our filtration plant, to service all the water needs of the golf course and the future population of 100,000 residents. This leaves over 100 million gallons for irrigation of the surrounding farm land.

Slide 16

I mentioned a filtration plant. Our team designed towards 100% recycle and reuse of all water. The water is drawn from the lake. It is then purified to be 100% potable and used by the residents of the community. The waste water is processed to be a quality that is 100% potable and discharged into the wetlands surrounding the perimeter of the golf course. These wetlands act as riparian zones between the community and the lake. The water then filters back into the lake for re-use. This process allows us to lose water only from evaporation from the lake and wetlands and other minor sources.

Slide 17

As with the water, we recycle 100% of our household trash. All kitchens are designed with 4 special locations in their cabinetry for glass, metal, plastic and garbage. This trash is processed where all glass, metal and plastic is recycled. The remaining garbage is mixed with processed sewage to create dirt. The buildings will have 4 separate trash areas to deposit this recycled household waste. The time frame to create dirt from the household garbage is approximately 4 weeks.

Slide 18

This enriched dirt has three potential uses in the immediate area. It could be used in one or all three of the following uses: Enriched dirt can be spread over existing cropland to enhance the soil. This enriched dirt can reduce commercial fertilizer needs by 50% on existing cropland.

Slide 19

The top soil can be sold to offset the cost of operating the plant.

Slide 20

This soil can be used to help restore the adjoining mountain range that has been harmed by mining.

Slide 21

As mentioned earlier, if the soil were used to help restore the adjoining mountain range, we would be suggesting the creation of the Huaijia Lake Ecological Wildlife Area. This park would be built and maintained by students at the university and volunteers from the community.

Slide 22

With this project comes a great opportunity for Huaibie to position itself as a location for students to study ecological science. In addition to studying science, ecologically responsible golf course maintenance, management and marketing could be taught to future employees. With this location also come two other fantastic open classroom projects:

- 1) The restoration techniques for damaged mining areas.
- 2) The study of wetlands for water filtration

Slide 23

To address the sociological and communities need to interact, we have designed Citizen Park. This park will be paved with bricks inscribed with individual names. There may be many ways to get your own brick placed at the park. Graduation from the Huaijai School of Ecological Science. High school children giving 500 hundred hours of free community service in an assortment of community programs such as helping the elderly, placing soil on the mountain, picking up trash, planting trees, etc. Corporations giving economic sponsorship to the university or local school systems. Local residents who give monetarily to area ecological projects or school systems.

Slide 24

One of the worst violations of our eco principals is the way we distribute our food. It is estimated in America the average meal travels over 700 miles before being placed on our plate. Some of this is unavoidable along with other nutritional needs, people need protein and vegetables. Presently, there is technology in fish farming that can grow almost a pound of fish per gallon of water per year. Our master plan represents an area that could produce 5, 850, 000 pounds of fish. That would be enough to serve all 100 thousand residents 6 ounces per person 3 times a week. An eco community needs a facility like this located close to the population to reduce the green house gases created thru shipping our food.

Slide 25

Likewise vegetables can be grown using hydraulic principals. The waste or manure created by the fish can be added to the water used in hydroponics' vegetable production. This disposes of the possible source of pollution while lowering fertilizer costs in vegetable production. The area designed on our master plan would produce five 8 ounce tomatoes per week per family along with 3 heads of lettuce per week per family of three. By using this sixteen acres for hydroponics

vegetable production, Huaibei would save 250 acres of agriculture land for other uses. This would also provide year-round fresh vegetables to the community without ecologically unfriendly transportation requirements.

Slide 26

By raising food locally, a reliable year round source of fresh food becomes available to residents. This source of year-round fresh food along with crops from area farmers can be sold at the local fresh market. Think about it; local residents can purchase fresh vegetables year round. Local farmers can advantage economically by selling vegetables in the local fresh market. The pollution from the raising of the fish is used and not placed into the waterways. Local jobs are created within walking distance. We avoid shipping food many miles. Everyone wins including the environment.

Slide 27

One of the worst forms of water pollution is roadway runoff. We need to rethink road design and construction when we build the roadways in an eco-community. Paver bricks are to be used. These brick have the ability to handle filtering 600 inches of water per hour. When properly installed, they can handle loads up to full size semi truck by limiting speed to 45 mph. This allows normal road use by almost any vehicle within the community. By using these bricks, road pollution into waterways is reduced virtually by 100%.

Slide 28

Gil introducing Gary.

I would now like to introduce a friend and business associate of 25 years, Architect Gary Best. Gary has his own architectural and engineering firm know as Best and Associates located in Maryville, Tennessee. Gary and I have worked on over 120 projects consisting of everything from custom homes to golf course communities. Gary and I have worked on this project for the last 5 months. As head architect, Gary will now present the Huajia Lake Eco-Golf Course Community. Please notice how this design addresses all 26 Key Performing Indicators. (Gary acknowledging Gil's introduction)

When Gil got back from China this spring, he said he needed a little help with a project. I said sure! After I hung up the phone, I started wondering what he was up to. He failed to tell me the project was a 40,000 family eco-gold course community. For some reason I wasn't really shocked. Just hang around him awhile and you will understand what I mean. So we went to work. I would design all week and hand it to him on Friday. He would spend the weekend in a cabin he built in the Cherokee National Forest and return on Monday with notes, concerns and suggestions.

I now present the Huajia Lake Eco-Golf Course Community

Slide 29

The first task in beginning a project is a comprehensive analysis of the site. This property has a mountain to the east that has a highway being constructed at the foot which creates a barrier for development in that direction to the south the property has an earthen dam which defines a seasonal lake. The north and west boundaries are bordered by an additional rock mountain that

presently has little to no vegetation and has grades that are not conducive to economical construction. With this in mind we the most feasible areas for construction. The brown areas represent that area.

Slide 30

Realizing that agriculture land was not to be used if at all possible and the fact that the lake was not a functional lake, we chose to downsize the lake to create a healthier lake and land for the community. We redefined the lake into a 260 acre (105 hectar) lake. This would allow for a sustainable lake that could be utilized for multiple functions. The lake would be defined on 2 sides with a golf course and wet lands and on the 3 side by the existing dam.

Slide 31

Our next step was to begin to define the areas for development. When designing the eco community, we paid careful attention to the 26 Key Performing Indicators with energy use reduction as a major focus in design. Located on the master plan are areas for residential homes, a commercial and retail zone, outdoor lifestyle zones for entertainment and social use along with an administrative and professional area. Each of these areas are carefully chosen for their locations to provide maximum impact for the users while providing minimal cost and environmental impact.

Slide 32

The first area of development will be to create the lake and surrounding land for our development. We have designed a 100 foot wide riparian zone along the new perimeter of the lake that would include wetlands to filter the water prior to it entering the lake. Adjoining the riparian zones is an 18 hole par 72 golf course designed by Mr. Heinsohn. We made a mirror images of the front and back 9 holes so as one side would favor a person with a slice in their swing and the other side would favor someone with a hook in their swing. Of course, a straight shot is always best. From the club house one would will cross a bridge over the lake to begin his first hole in the head of the dragon.

Slide 33

Once the lake has been created along with the surrounding land be will begin the development of the first residential area. This phase will provide the most elite areas of living that will have both views of the golf course, lake and the surrounding mountain. This first area will be seated on 297 acres (120 hectars) and will include approximately 18,000 homes. The initial concept is to have a average of 400 homes in an 8 story structure.

Slide 34

Each building will have a ground level that will have some residential units but will mainly be utilized for a variety of uses. Some buildings may be used as school zones. Some will have small

convenience shops, hair salons, spas and speciality stores. The core atrium space will have swimming pools and spas as well as cafe's and garden type settings. Outside the buildings there will be walkways which will access pavilions, picnic areas, fountains, patios for entertainment, as well as recreational areas for basketball and tennis. All the buildings will have adjoining amenities, access to a mass transit system that circles the property, and access to miles of walking and jogging trails.

Slide 35

Even at this early stage we have stated to create the environment of the neighborhood for which we are proposing. Careful design of the buildings will yield a more energy efficient facility but will also provide an upscale living environment for its owner while not creating an upscale cost. In the cross section we have provide let us begin with the basement. All vehicles will be housed in a basement parking garage where all utilities and services will be handled underground. We have built the communities entire roadway for conventional transportation under the buildings along with the parking for the residents. All utility service is located in accessible zones adjoining each roadway. This allows for more green areas on the surface and the ease of maintenance of utilities and services.

The core of the building would allow for each unit to have windows on both sides which would allow for air flow through the units which will reduce the dependence on air conditioning. A balcony streetscape with landscaping and garden opportunities for the owners will enhance the neighborhood environment experience. The roof over the atrium area will be retractable during the cold portion of the year to provide a tempered indoor environment for utilization year round.. On the roof are two types of solar collectors, photovoltaic and parabolic. The photovoltaic will charge conventional and industrial batteries assigned to each residence parking space. These batteries will be used to assist the recharging of electrical transportation. This will provide each owner a low cost recharge from a renewable energy source. This will also provide a base for future improvement in solar to provide more independent use of solar for power. The parabolic solar provides energy to a unique system designed by Gil and I during the last five months. This system processes the solar energy into hot water and stored in tanks in the basement. Mr. Heinsohn will be addressing this system later in the presentation.

The site will be generate no waste for land fills. Paper and food products will be taken to the onsite compost area and will be added to the by products of the waste plant to generate soil as Gil pointed out earlier. All glass, plastic, and metal will be collected and transported to the respective recycling plants

Slide 36

Phase two will complete the residential communities. A light rail or subway will connect the site with a 7 mile loop that will be available for all residence. The roads shown on the surface will be brick paved roadways for emergency access, slow speed electric passenger vehicles, bicycles and walkers. As mentioned earlier all services will be handled underground.

Slide 37

The containers that receive the household garbage will be transported to the recycle site Gil spoke of earlier. This compost site can make soil in four weeks and if properly maintained, there will be no odors leaving the recycle site.

Slide 38

Community interaction is key for any neighborhood. Citizens Park will have pavilions for picnics, birthday celebrations, weddings, family reunions, a swimming area and beach along with an open air theater for concerts and performances by local talent or nationally recognized entertainment.

Slide 39

The college will provide the local students an opportunity for higher education without leaving the community. The Huaijai Lake University can offer platform of courses within a working eco Research and study of the systems put in place by this development provide a hands on experience of the students and teachers.

Slide 40

The sport complex is an area for every type of activity imaginable. A large arena area will provide the neighborhood schools an area for many types of organized sports. Swimming, basketball, tennis courts and a state of the art fitness training center will be provided. Also, with this facility adjacent to the golf course and at the heart of the development it posses easy access for the entire community for sports, recreation and entertainment.

Slide 41

As we outlined earlier, once we bring the lake to a healthy sustainable state, it will be utilized for many purposes. As the water in the lake will be exceptionally clean, we have placed fishing peers for the community to enjoy.

We have used the space in front of the dam for floating houses. These homes can be pre-manufactured in a local factory to help with area employment. These floating houses will can become a viable source of housing for Huaibies subsided areas. Adjacen to restaurant roow there will be a marina for people to rent row boats, sail boats, kayaks and small electrical power boats for use on the lake.

Slide 42

In a lagoon adjacent to the marina we have developed a food services district in close proximity to the fresh market, mass transit terminal and the new highway. This location was chosen so people outside of the community can access the restaurants without driving through the residential neighborhoods. This area will have a boardwalk along the lake a small band stand, fountains in the lake, and laser light shows after dark are possibilities for tourist development.

Slide 43

The commercial area was chosen for multiple reasons. By placing the shopping mall along the new highway the provides ease access for servicing the facility and also provides a buffer from the noise generated from the traffic. This mall would house state of the art grocery stores and shopping that could be conducted on line for the residence with ease of delivery with the mass transit system. In the commercial zone, we located a fresh food market for the local farmers to sell their products. Discount shopping opportunities like the Beijing Silk Market could be created to enhance tourist development. The close proximity to the highway allows easy access for supplying the surrounding communities. These facilities reduce the carbon footprint of the entire development by reducing the travel distance of bring the products to the consumer.

Slide 44

A large convention center along with an administration area could be located next to the community. This convention center could be used for corporate retreats and large entertainment venues. Surrounding this arena could be professional offices for doctors, Real Estate and home rental services.

Slide 45

As you can see we have developed a well rounded community packed with amenities and built around a bases of energy efficiency that not only provides a much smaller carbon footprint than any other development but provides a marketable desirable environment for its residence.

Slide 46

One of the many discussions Gary and I had was the need to combine the energy of solar with heat and air conditioners, the heating of hot water and a reliable system for thermal storage. As we were working on this eco-community project, we came up with a marketable design. Our system can be used for single residences as a pre-packed unit or custom designed for larger building groups. Our system will reduce power consumption on virtually any residence by over 40%. It can be installed in existing homes. The system should be the anchor for any countries green revolution. We are presently looking for partners, public or private, to assist us in the test phase and the manufacturing.

Slide 47

Please notice the red area at the top of the map. All communities need an industry to feed their economic engine. We chose tourism because we know tourism. The red area on the map needs to be used for the catalyst to fire off the economic growth we know as tourism.

Slide 48

When I was six years old I went to a small amusement park called Rebel Railroad in Pigeon Forge, Tennessee. It consisted of a small train ride with cowboys and Indians shooting at each other while the tourist rode a small loop on the train. There was a craft shop where I got a horseshoe with my name on it. In later years it was purchased by a group of investors as Silver Dollar City. There was not a lot improvement. Then when I was a young adult Silver Dollar City was purchased and Dollywood was born. At the time Pigeon Forge was a scruffy tourist town of cheap motels that survived on the overflow of tourist from Gatlinburg, Tennessee. Once Dollywood was built Pigeon Forge and Sevierville grew to an economic hub far larger than Gatlinburg. The investors built it and the tourists did come.

Slide 49

Dollywood created the economic anchor for the Pigeon Forge economy. From that start business people invested in hotels, restaurants, music theaters, discount malls and it just keeps growing. Sevier County in a matter of thirty years went from one of the poorest counties in Tennessee to one of our richest.

Slide 50

Even areas like Townsend – over 15 miles away grew in visitations. Adopting a different direction in tourist development Townsend flew under the banner of “The Peaceful Side of the Smokies”. Cades Cove is the major attraction, Little River floating or fishing, outdoor activities like horseback riding, Cades Cove tours and the Heritage Museum. The point being, people had been going to Gatlinburg for 50 years to visit the Smokies. For those of us living there the tipping point, the catalyst that caused the economic explosion was Dollywood.

Slide 51

Read off screen

Slide 52

Read off screen

Slide 53

Read off screen

Slide 54

Read off screen

Slide 55

This concluded our presentation of the Huajia Lake Eco Golf community. It is worth noting that we could have this project shovel ready by June 2010. We appreciate the opportunity our Chinese clients have given us to design this community. They have clearly taken the lead in the Eco community development. It is time though for America to get in the game. Retrofitting homes with some of the designs we have been presenting today could be the catalysis that would restart Americas sputtering economy. Now is the time to lead. We now have all of this presentation on our web site with all of the talking points. Any additional questions maybe emailed to us and we will promptly answer. I will now open the floor for a brief question and answer session.