

MINUTES OF THE COMMUNITY POOL BUBBLE ALTERNATIVE
SUBCOMMITTEE MEETING HELD ON TUESDAY, SEPTEMBER 15, 2009 AT
7:30 P.M. IN COUNCIL CHAMBERS, TOWN HALL, 84 SOUTH MAIN STREET,
CHESHIRE CT 06410

Present

Chairman Matthew Altieri and committee member James Sima. Absent: Laura Decaprio.

Councilors: Thomas Ruocco, Timothy Slocum, Timothy White

Staff: Town Manager Michael A. Milone; Deputy Public Works Director George Noewatne.

Others Present: Mr. Cohen and Mr. Ogurick, Energy Commission

1. ROLL CALL

The clerk called the roll and a quorum of the committee was determined to be present.

2. PLEDGE OF ALLEGIANCE

The group Pledged Allegiance to the Flag.

3. REQUEST FOR PROPOSAL (RFP) FOR POOL STRUCTURE
INTERVIEW WITH VENDORS.

Mr. Altieri explained that the Pool Subcommittee issued an RFP, and four responders will be interviewed, with two on September 15th and two on September 16th. The presentation time is 1 hour and 15 minutes for each responder, including a question and answer period. At this time, Mr. Altieri stated that the committee is not looking for public input on whether they like or dislike the proposals. Comments and questions on the proposal will be heard.

GF RHODE CONSTRUCTION

Presenters: Judith Katz and Grant Rhode, GR Rhode Construction

John Meyer, Meyer & Meyer Architecture and Interiors

Mark Albertine, OpenAire, Inc.

William Metzger and Andrew Grant, Crest Mechanical Services, Inc.

A copy of the presentation documents were given to Town Council members, and a copy is attached to these minutes.

Ms. Katz was the first presenter. She explained that the design of the pool enclosure is a thoughtful one; it is an aluminum/glass structure with retractable roof system; it will be custom made for the Cheshire pool and the community needs; and it will have an HVAC system with significant energy cost savings.

Budget Summary - \$5,192,363. Open air structure costs decreased by \$100,000; HVAC decreased by \$812,000; architecture and contingency fees

have decreased; add alternate of \$297,000 for cogeneration option; add alternate of \$100,000 for wading pool lean-to structure; and the proposal does not include a pool cover.

Highlights – permanent aluminum enclosure with operable roof via rack and pinion direct drive system; design and configuration customized to meet Town needs; 1” polycarbonate in roof panels; 1” glass in vertical surfaces; low voltage system wired to central control box; HVAC system will result in significant energy cost savings and return on investment; budget proposal revised down 9% due to lower aluminum prices, value engineering, and lower fees.

Benefits – aluminum building will not rust, rot or corrode; building is maintenance free; 10 year warranty on the building; open roof panels allow for natural light, ventilation, improved environment; facility open in all types of weather; reduced exposure to UV rays; elimination of mold/mildew issues; health improvement; 40% energy savings due to reduced consumption and cogeneration; increase in membership with increase in revenue, positive cash flow, no taxpayer subsidies; performance contracting lowers bonded amount; lowest long term ownership cost based on design and value engineering.

John Meyer informed the committee that his company, Meyer & Meyer, has been in business for 30 years, and has done many recreational and civic projects throughout the country. In driving by the Cheshire facility he noted it is prominent from the road and is a huge asset to the community.

Mr. Meyer commented on five design comments. The open air structure is permanent, simple, strong, of high quality, will last forever, has a strong aluminum structure with a truss system and glass. The current high style is steel/metal/glass structure and it will always be in style. The Canadians have developed this type of structure for extreme weather conditions and it is installed without hardship. There is complete short term payback in energy and maintenance. The range of design is minimal versus more sculptural, will have more civic presence from primary views, and there is flexibility for future expansion/renovation.

Photographs of existing aluminum/glass structured pools were shown on the screen to those present, including the Milford CT YMCA facility.

Mark Albertine, Open Aire, stated his company has been in business since 1995, and builds structural aluminum buildings, with skylights over the pool, and they build structures that work all over the world. He pointed out the design which his company has come up with for Cheshire's pool facility. His firm works with the architects to give communities something to be proud of and what they can live with. For these structures the exterior must be kept from the interior. Everything with Open Aire design has vapor barriers, thermal breaks, uses curtain wall on the construction, the design is minimalist in design, with the goal to make the

structure last forever. Everything is designed and engineered to local codes and conditions. Mr. Meyer showed an illustration of a dome designed facility, spanning 300 feet, which will be opening in the Ukraine in a few weeks.

Mr. Meyer pointed out the reasons for a glass and aluminum building. They are bright and open, have natural light, natural ventilation, protection from weather, and improved revenue stream. These buildings create a bright and airy atmosphere where people want to swim. The structure works because of the opening roof, and without it people cannot swim in the summer. In good weather the building is treated as an outdoor pool. In inclement weather the pool is closed up because the solar loads reduce. In bad weather it is shut down, roof is closed, run the HVAC system, but still have a bright airy environment.

In an analysis done on a Boston pool, Mr. Meyer cited 31% annual electrical savings, and 27% savings in annual natural gas consumption. The savings were realized because during the day there were light hours, and no lighting was needed inside the pool. The pool roof is a positive drive, can be hooked up to all HVA systems, and when it is open the HVA system is shut down. There can be overrides in April and October with the roof cracked, lowering the HVA system, without energy operating costs.

Mr. Meyer stated that aluminum is used because there is lower rust, rot, and corrosion, and has a 10 year bumper to bumper warranty. Cheshire will not pay five cents to maintain the Open Aire portion of its building, and any issues on the opening roof panel will be taken care of by the company. The reason for building out of aluminum is to provide a structure that will withstand all the moisture, chloramines, and everything that a public pool facility can throw at it. And, it will look as good 20 years down the road as it does when first built. Mr. Meyer noted that Milford was an existing pool over which the aluminum structure was built. He explained that the columns in the structure are self-supporting without any additional load.

William Metzger and Andrew Grant, Crest Mechanical presented the information on the mechanical aspects of the structure. Crest Mechanical has been in business for 33 years in the Hartford area, provides energy solutions, and is involved with cogeneration systems.

Mr. Metzger reviewed the electrical cost assumptions, the baseline for energy costs, noting that with cogeneration some of the energy costs for running the facility are reduced. The commodity cost is about 9.5 cents, with transmission and distribution costs added in at 6.5 cents, for a total of about 16 cents per kwh. Crest Mechanical came up with some solutions in the cogeneration area, and has found a company which manufactures cogeneration equipment. They are willing to join with Crest to provide a power purchase agreement for the Town, over a 10 year period, with power sold from the cogeneration system at 10 cents per kwh. This would be a savings of 6 cents per kwh for the Town. There would

be a rider of 4% per annum over the 10 year period. With passage of the 2005 Connecticut Independent Energy Act there was a piece providing payment for only the commodity when using gas cogeneration. The commodity is about \$1.30 to \$1.40 ccf, which is a savings from the \$1.70 total cost. Mr. Metzger explained that cogeneration is using natural gas, simultaneously producing electricity and heat. This is having an engine driving a generator on the one side of the shaft, and the other side there is heat from the engine itself and from exhaust. Putting all this together there can be a good deal in making heat for such a large pool.

HVAC Systems – there are three efficiency pool dehumidifiers for the main pool area with air heating capacity utilizing gas and heat recovery. There is one high efficiency pool dehumidifier for the wading pool area. Mr. Metzger pointed out the HVAC layout proposal. There is an estimate of \$35,000 savings with the pool design. Mr. Metzger reviewed the attributes of the HVAC system, which include serious control outdoor air during fluctuating occupancy loads, utilization of carbon dioxide sensors to minimize outdoor air intake, and operation of the Open Aire roof controls by a computer system to optimize energy consumption.

Other system options considered were a pool dehumidifier with pool water heating priority, pool covers costing \$100,000 with a \$30,000 savings, solar PV and thermal, geothermal, and cogeneration performance contracting. A company in Nevada makes the cogeneration units and is willing to participate on a 10 year power purchase agreement, providing the equipment and items which go with the system. With the performance contracting, the alternate \$297,000 would take care of the infrastructure where the cogen would be, and the company would pay for unit installation. The first 3 years would be maintenance free, and after that the Town would have to make a deal on the maintenance of the units in years 4 to 10. The company is offering to purchase electricity on the site and sell it to the Town at 10 cents with the escalator of 4% per annum. The heat from those engines would provide the heat free of charge to the Town, with the pool sucking up the heat with dramatic savings.

The meeting was opened up to questions and comments.

With the Open Aire system, Mr. Sima asked about the heat shield in the evening to stop loss from the pool and concrete area out through the glass.

Mr. Albertine said there could be retractable blinds to keep the heat in, but they are not included in the proposal.

Mr. Sima asked about altering the roof pitch to eliminate water over the load area.

Mr. Albertine said there is some flexibility with installation of gutters to drain out of the structure, and the roof could be kept pitched to anything the Town wants.

Regarding the sheer load, Mr. Sima asked if the design is enough to handle the hurricane requirements.

According to Mr. Albertine everything is designed to State and local regulations, and Connecticut has a 110 mph wind regulations.

With the 10 year warranty Mr. Sima asked about a disclaimer regarding the hurricane issues.

Mr. Albertine said everything will be 100% within the 10 year warranty.

For the mechanicals, Mr. Sima asked about CO-2 sensor and air exchange for building occupancy and if it meets State standards.

There are six air changes and Mr. Grant said there is a national building code which has $\frac{1}{2}$ cfm per square foot, and the proposal is above that. We must meet the fresh air requirements.

With the partially open roof and a 50 degree sunny day, Mr. Sima asked how to make sure there is no short circulation of fresh air intake to the roof and for dead air space near the pool area.

Without enough air circulation to the floor level, Mr. Albertine said the unit goes back on and circulates air. Some pools use large fans and get fresh air down to the ground.

On the price reduction, Mr. White questioned the total cost being somewhat volatile with regard to commodity prices.

It has been found that aluminum prices are coming down and Mr. Albertine said if prices go up the cost of construction would increase. The cost has been as high as \$2.30 per pound and as low as \$1.70 per pound. There could be a swing of \$150,000 up or down.

For the air emissions permit, Mr. Rhode said that the units are cookie cut. There has been test data. We must get an interconnect agreement with the utility company so the job can keep moving.

Mr. White asked about the juncture between the old and new buildings.

Mr. Rhode explained that the edge of the roof is supported by columns which run down, and cited the Milford pool as an example of this structure. There is no structure integration between the two buildings.

Kevin Wetmore asked how long the pool would be closed for construction, the performance for the contractor during the last 5 years, and if there was any penalty for not delivering on schedule.

In that regard, Mr. Albertine said the company takes pride in bringing buildings on time, and has never had a penalty. They stick to the schedule, and operate all over the world. The down time for the community pool would be about 5 months.

Lou Cohen, Energy Commission member, asked if the cogeneration system would be operating during the summer months and rest of the year when the building is open. He is concerned about noise and the impact on the public when the building is not closed.

Mr. Grant explained they try to keep the system running day and night and the success of the performance of the cogeneration system rests with using the thermal part. The system can be switched to 80kw unit and 50 kw unit. In the summer time when the rest of the system is not working, 80kw will be running, support the building and wipe out the demand for electricity. In the winter time is when the other unit will operate in parallel with the first unit. Noise is an issue to be addressed. Savings must be looked at from an acoustical and energy standpoint. But, noise will be addressed.

Doug Levens asked about the Open Aire system, and when it is open, what percentage of the building is open.

Mr. Albertine said that 50% of the building would be open.

Mr. Levens asked about maintenance and cleaning of the glass.

In response, Mr. Albertine said that in the 6 years the Milford Y pool has been open they have not cleaned the structure. The roof is self cleaning, and with glazing they may not have to be cleaned.

Ms. Katz stated that information was left for the Councilors and Commissioner to review.

Mr. Altieri thanked everyone for their informative presentation.

OR&L CONSTRUCTION

F. Todd Renz, Executive in Charge
Tanya Cutolo, AIA, Project Executive
Daniel P. Harazim, AIA, The S/L/A/M Collaborative
Thomas A. Wunder, CEO, van Selm Engineers

Todd Renz stated that OR&L Construction has experience in design/build, and invited Council members to visit any of the firm's projects included in the proposal presentation.

Mr. Wunder is the site engineer for the project, and he will deal with the footprint of the building and impacts from construction. From a site improvement perspective this will be seen in two areas, storm water management and accommodation of the new building in the existing building. The project must go through site plan approval, and the pool building project is a building project.

Mr. Harazim said his goal for the project is to create a healthy and energy efficient building, and address all of the projects associated with the building. OR&L is aware of controlling moisture in the pool building, and it is a simple plan for a natatorium and the mechanicals. The structure would be a solid wall with windows along the south and west for good daylight, with the west façade windows facing north with openings along the south end. It is a modest structure with large gentle slopes, insulation envelope, fiber glass panels, and access to daylight. The interior features are a sloping roof, pre-engineered steel frame, concrete block walls, epoxy paint, with good attention to detailing in the design end and construction.

Photographs of other pool projects were shown on the screen during the presentation.

The structure is designed for sustainability with five major categories, with energy use as the most important issue for this project.

Mr. Wunder addressed the sustainability design process, stating that we must minimize the load, have more efficiently designed mechanical system, with the building operated and maintained properly. An enclosed pool has challenges with infinite sources of humidity, air temperatures are higher, maintaining lower water temperatures, and minimizing operating costs. The envelope of the building must be designed so there are not cold surfaces, with the need for thermal value on the walls. He said moisture in the pool will go anywhere, and the vapor pressure building must be designed to maintain and contain humidity and the least minimum dew point.

OR&L did a preliminary mechanical and electrical system analysis. During the summer there must be as much ventilation as possible. Locker rooms are a source of problems which will be eliminated. Electrical service will be replaced,

bringing in more power. Energy savings of about \$75,000 are anticipated annually, with electrical cost savings of \$5,000 with LED lighting used. Included in the proposal is a cogeneration plan with a payback in 5 years, and a total net energy savings of \$70,000 annually.

Projected annual savings – cost of the bubble installation and removal is \$55,000; bubble replacement reserve is \$192,000 every 15 years or \$13,000 annually; total net energy savings is \$70,000; projected total annual savings is \$138,000.

Mr. Renz stated that no utility incentives have been developed because the firm has not talked to the utility companies yet. There are areas to be explored for savings.

Project delivery – The preliminary construction schedule was cited by Mr. Renz with referendum approval in January 2010; a start time in late Spring 2010 and completion and turnover to the Town in November 2010 for occupancy.

Costs – the total estimated cost of the project is \$5,359,528, but there could be savings with some of the energy areas in the building.

Mr. Renz concluded by stating that the plans have been reviewed by his staff; there was a site visit; and OR&L wants to create a healthy and energy efficient pool enclosure which will cost less than what the Town is currently paying. OR&L has an open book policy, and with the building committee must look at overall costs for the project. There will be reduction in energy consumption, savings to the Town, and OR&L will have an experienced project team working with the Town.

The meeting was opened up to questions and comments.

Mr. White asked about the proposed structure and its attachment to the existing building.

Mr. Harazim stated that the new construction would be independent of the existing building. The concrete wall is not designed to handle additional roof load.

Regarding the HVAC, Mr. Sima asked about the fans, 10,000 btu heat wheels, and where the 20,000 cfm would be going.

Mr. Wunder said they have tried to keep to get 68 air changes and keep the temperature and humidity the same. The assumption is a well performing building, and the better the building is built, the less cost to operate.

Mr. Renz noted the firm would be going to the utilities for better R value and payback, and there will be ideas for the building committee. The firm is going with high insulation with buildings they are designing.

For the pool cover used for 12 hours, Mr. Sima asked about the mechanicals to do this.

Stating it is important to have a pool cover, Mr. Harazim said midnight to 6 a.m. covering of the pool will save energy. It is a giant cover, on a roll, on pulleys, but he is not sure of the effort involved in covering such a large pool.

Throughout the process Mr. Renz said there will be recommendations on maintaining a pool cover which will create energy savings.

Mr. Sima asked about the 40 ft. x 60 ft. building for the mechanical room and if such a large space is necessary, and if the room will be inside the existing space.

Mr. Harazim said there is a need for room for the air handlers and other equipment, and the proposed design is the right size for the room.

With fans and duct work, Mr. Sima asked if they will be used to move air and how air will be moved into the building.

Mr. Wunder said there is a fan room; there will be round duct work; and there can be aluminum type duct work. When designing an air handling system and duct system there cannot be too high a velocity. There is a need to break the air down for cooler air. There may have to be some wall washing on the outside wall to reduce condensation. The most economical ways to do this will be looked at. This design is using heat recovery walls, and this is critical in the winter when there is a dew point issue. They will be using a cow wall, and Mr. Wunder said we must be careful about glare on the water surface.

Sylvia Nichols asked about the cow wall, windows clouded up and discoloring, and looking terrible.

Mr. Harazim said they are fiber glass panels, and light transmittance can be controlled.

Ms. Nichols had concerns about humidity levels and mold in the existing building, and how humidity can be kept out of the building.

Part of the project will involve treating the existing wall and Mr. Harazim said sealants will be used, along with door design and air locks.

Mr. Wetmore commented on a pool cover not being practical for a 50 meter pool as it would require too much automation. For the construction period, the pool is

scheduled to close for 7 months. He asked about guarantees for the pool and maintenance schedule for the facility and any warranty.

According to Mr. Renz the typical roof system has a 20 year guaranty. The other components will have ranges of warranties, i.e. 5 years for the mechanicals and 20 years for the glass.

Mike McArdle asked how humidity will be handled.

Mr. Harazim said there are epoxy type products that can be used, and it is important to have the right one and apply it properly.

Mr. Renz stated they will have tight water products with membranes for protection and this is included in the proposal.

Anne Giddings asked about what maintenance is required.

Maintenance is important and Mr. Renz said the construction process must have good specifications about high quality products used with maximum warranties. There is little maintenance to the structure, and the contractor makes sure the system is running as designed. There will be testing, and training for the Town crews who handle the pool. Cogeneration parts will be maintained by the contractor.

Doug Levens asked about the pool cover on for 12 hours a day when the pool is open 15 hours a day. This should be changed to 9 hours. The committee should have everything about operating the pool with and without a cover.

The pool cover would have to be custom made.

Richard Ogurick stated that for the pool cover, there could be three smaller ones rather than one large cover.

Mr. Sima asked about the life of the epoxy paint, and if this is an integral protection of the structure.

Mr. Renz offered to get information from the spec write on the paint and advise the committee.

Committee Chairman Altieri thanked OR&L for their presentation.

4. ADJOURNMENT

MOTION by Mr. Sima; seconded by Mr. Altieri.

MOVED to adjourn at 10:00 p.m.

VOTE The motion passed unanimously by those present.

Attest:

Marilyn W. Milton, Clerk