

# Morris Communications Corporation

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Corporate Architect  
VP Properties & Facilities

## MEMO:

Date: August 19, 2013

### Conference Call:

Ben Leppard – Leppard Johnson & Assoc.  
Jacques Ware – Augusta GA. Gov.  
Mark Gaddy – AHA Engineers  
Robert Kuhar – Morris Communications

Subject: Central Chiller Plant Concept

1. Development of a Central Chiller Plant concept was discussed with Ben Leppard of Leppard Johnson & Associates, engineer of record for the new Augusta Convention Center.
2. Ben indicated that the central plant was a part of the design very early on in the project however due to budget constraints, it was not fully implemented. Addition space was provided for expansion of the system.
3. Early discussion involved tying in the existing Conference Center, the Marriott and the Marriott Suites.
4. At this time only the Conference Center and the Marriott are being considered for connection into the central plant.
5. Ben agreed the Marriott and Conference center could be metered by either flow meters or BTU meters to determine cost of operation between the different facilities
6. We discussed the central plant would be more efficient and cost effective to operate than several individual roof top units however it would be very time consuming to actually calculate this.
7. All agreed that if the campus were built at the same time a central chiller plant would be the preferred method of providing cooling.

**CONVERT MARRIOTT AND CONFERENCE CENTER TO CHILLED WATER TONAGE ANALYSIS**

<u>Building</u>	<u>Equipment</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Years 6 to 15</u>
		TONS	TONS	CAPEX	TONS	TONS	TONS
Original Conference Center RTU	Convert to Chiller Plant	100	0	0	0	0	0
Original Conference Center RTU	Convert to Chiller Plant	0	100	0	0	0	0
Conference Center Addition RTU	Convert to Chiller Plant	0	0	0	0	65	0
Conference Center Addition RTU	Convert to Chiller Plant	0	0	0	0	65	0
Marriott	Convert to Chiller Plant	260	0	0	0	0	0
Convention Ctr Chiller Plant	Add 400 Ton Chiller	0	400	0	0	0	0
Convention Ctr Chiller Plant	Add 400 Ton Chiller	0	0	0	0	0	0
Current Convention Ctr Load		420	0	0	0	0	0
Total Tonage		780	880	880	880	1010	1010
Total Tonage Available		800	1200	1200	1200	1200	1200
Excess Tonage		20	320	320	320	190	190

Convention Ctr Expansion = 160 tons

9:00 AM  
CMT MTG.

MARRIOTT CONVENTION CENTER  
AUGUSTA, GEORGIA

Centralized Cooling Concept  
August 12, 2013

- A central chiller plant cools the new Convention Center with cooling towers located on the roof.
  - Two chillers provide 400 tons of cooling each. There is a total of 800 tons of cooling available.
  - When fully occupied during the warmest time of the year the current Conference Center requires approximately 400 tons of cooling.
  - There is 100% redundancy provided by the second chiller.
  - All piping stub outs and additional space has been provided to add two additional chiller and cooling towers to facilitate future expansion. The future expansion (on the drawings) included the convention center and the conference center.
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- We propose to convert the existing Conference Center along the river and the Marriott Hotel to operate off the central chiller plant.
  - The total combined cooling load is approximately 700 +/- tons. Marriott - 260 tons, Conference - two 100 ton units (one to be replaced in year 1 and the other in year 2) and two 65 ton units (to be replaced in year 5)
  - The addition of a third Chiller and cooling tower to the existing chiller plant will provide approximately 1200 tons of cooling with back-up.
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- The cost of the third chiller/ cooling tower, pumps and all piping to be covered by the Marriott.
  - Measure the amount of chilled water sent to (being used by) the Marriott and conference center over a given period of time and convert that to KWH. This will be achieved by BTU Meters, power check meters and software.
  - This measurement/calculation could be set up in the BMS (controls system) to produce a monthly type statement.
  - The KWH is multiplied by the current monthly rate to get the cost.
  - Maintenance and repair cost would be shared based on percentage of KWH used per facility

- All equipment would be run on a lead lag basis to keep hours of operation on all equipment the same.
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Benefits of a central chiller plant.

- All equipment will operate more efficiently.
- Lower energy consumption per ton of cooling
- Less maintenance cost per facility
- Lower operating costs per facility
- The Facility will be Greener (This can be an advertised entity by City of Augusta)  
"Augusta is more Green"??
- Possible rebate(s) from utility provider (Georgia Power ?)



To see all the details that are visible on the screen, use the "Print" link next to the map.

