RTP Data Center Fact Sheet

Data Center Details

- Phase 1: 60,000 sq. ft. / 6 megawatts of power.
- Ultimate design: 100,000 sq. ft. / 15 megawatts of power.
- Designed to support new compute models like cloud computing to help clients worldwide operate smarter businesses, organizations and cities.
- Reduces technology infrastructure costs and complexity for clients while improving quality and speeding the deployment of services – using only half the energy required of a similar facility its size.
- Intelligent systems use sensors to continuously read temperature and relative humidity throughout the data center and dynamically adjust cooling in response to changes in demand, reducing annual energy costs by 15 percent.
- More than 8,000 branch circuit monitoring points automatically monitor IT systems; more than 2,000 sensors gather temperature, pressure, humidity and air flow information from air conditioners; and more than 30,000 utility and environmental sensors interconnect with software tools.
- Hosts recently announced cloud computing offerings including "IBM Smart Business Development and Test on the IBM Cloud" and "IBM Smart Business Desktop on the IBM cloud."
- Modular design enables significant expansion of future capacity in half the time it would take traditional data centers to expand.
- No disruption in existing operations to scale capacity. IBM can defer up to 40 percent of capital costs, and up to 50 percent of operational costs, for the facility until client demand necessitates expansion – by adding chillers, computer room air conditioners, generators and floor space when needed.
- Can seamlessly expand its power and cooling capacity by two and a half times.
- Offers dual-site capability for disaster recovery and load balancing in conjunction with IBM's recently enhanced Boulder, Colo., data center.
- Supports both air- and water-cooled technologies.
- Hosts a cloud computing solution in partnership with North Carolina Central University (NCCU) and NC State University that enables Hillside New Tech High School students in Durham, NC to access educational materials and software applications for the classroom over the Internet from the high school's computer lab, as well as from any networked device.

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Green Details:

- Takes advantage of free cooling – using the outside air to cool the data center – for nearly half of the calendar year.
- Intelligent systems use sensors to continuously read temperature and relative humidity throughout the data center and dynamically adjust cooling in response to changes in demand and avoid 15 percent annual energy costs.
- Mechanical system design is 50 percent more efficient than one without heat exchangers for free-cooling or chillers, equating to a reduction of approximately 31,799 tons of carbon dioxide emissions.
- Reflective roof reduces solar heat.
- Collects rainwater for reuse.
- 95 percent original building/shell structure reused.
- 92 percent of construction waste recycled (4,017 tons)
- 20 percent of new materials from recycled products.
- Uses low-sulfur fuels to reduce emissions from backup generators.
- Energy efficient lighting technology on timers.
- Applying for Leadership in Energy and Environmental Design (LEED) Gold certification for facility. LEED is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings.

Data Center Construction:

- IBM started building in August 2008 and it began to support client operations within 15 months compared to the industry benchmark of 18-24 months – setting a new standard for the construction of energy-efficient data centers.
- 300 construction workers employed during the project worked 302,000 hours.
- 6,580 pieces of 4 ft x 8 ft drywall and 14,578 raised floor tiles used in construction
- More than 1,400 batteries, 420 light fixtures, and 1.6 million linear feet of electrical cable installed
- Chiller refrigeration capacity is enough to create ice for a hockey rink from room-temperature water in about 20 minutes.
- Pumping capacity of chilled water and condenser water systems is enough to fill an Olympic-sized pool in half an hour.
- Air flow capacity of combined HVAC systems is enough to fill an average US home with fresh air once every second.