



**SYRACUSE UNIVERSITY, SYRACUSE, NEW YORK**

**NMP OSP: Redundant Fiber Optic Backbone  
Communications Infrastructure Upgrade**

*OS2 Single-Mode Fiber-Optic Backbone Network For 10G Support*

**Project Description**

Archi-Technology was involved with orchestrating a multi-year Outside Cable Plant (OSP) Upgrade for the Syracuse University's Network Master Plan (NMP) Project for the main campus, that upon completion, provides redundancy and survivability that's never been possible before.

AT's efforts included oversight of the design and installation of a quarter-million feet of OS2 single-mode fiber to improve inter-building connectivity infrastructure, network diversity, redundancy and reliability across the main campus. The firm also provided a physical audit with documentation of existing underground and aerial pathways, as well as existing underground cabling required for the completion of the last phase of secondary (overlay) fiber installation.

**Challenges**

- Outdated documentation and records including mis-marked manhole covers
- Impassible or nearly exhausted underground pathways
- Deferred maintenance in underground spaces
- Aerial fiber deployments to minimize leased metro fiber
- Ongoing roadway and underground utility reconstruction that delayed fiber deployment
- Unique Ductbank and Conduit naming convention/standards
- Converting CAD (buildings and butterflies) to include consistent North arrows
- Space in existing racks and high density splicing at connector housings
- Customizing UPC and APC connector bulkheads, for future IPTV/video
- Coordinating utility construction and multi-year building Capital Projects
- Determining /documenting Public Utility ties for underground and aerial demarcs in the public right-of-way

**Archi-Technology Responsibilities**

- Lead designer/construction manager responsible for coordinating with ITS groups, campus facility departments (parking, public safety, special events, registrar classroom schedules, safety personnel, and building managers).
- Development of CAD layering for backbone-fiber subsystems to enhance information flow by displaying data in a geographic view (including layer control in PDF formatted files).
- Database report updating for pathways, manhole butterflies, cabling (including backbone pathways inside buildings) for import into new Mapcom M4 visual software system.
- Oversight of quality documentation from dozens of ongoing inside network upgrades with the goal of consolidating ISP records with new OSP system documentation.

**Statistics**

**Total Program Cost** (excluding new manholes and ductbanks) . . . . . \$ 3,000,000

**Firm Responsibility Cost** (excluding new manholes and ductbanks).. . . . . 2,000,000

**Completion Dates**

- Core Network . . . . . Oct. 2012
- Primary Network . . . . . Jan. 2014
- Manhole and Cable Audit . . . . . Oct. 2014
- Secondary Network . . . . . March 2015
- Ongoing ductbank augmentation . . . . . 2013 to 2017
- Future fiber builds . . . . . 2015 to 2018

**Project Contact**

Please call 585-424-1952 for project references.

**ARCHI-TECHNOLOGY'S ROLE**

**Functions**

- Budgeting
- Strategic planning
- Design/construction management services
- Utility mapping of existing & new cable and pathway in databases

**Functional Requirements**

- ISP and OSP Space, Pathway and Cable Audits
- Underground and Aerial pathways (physical and logical diversity)
- Interior Backbone pathways (diverse routing)
- Star- and partial-mesh networks
- Pre-purchase/reel put-ups for 24, 48, 144 and 288 SMF
- Confined-space safety coordination and permit adherence
- High-density LC connector layouts for UPC and APC pigtail splicing



*Technology Consultants for the 4<sup>th</sup> Utility*



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