Today’s renters and buyers expect commercial and residential spaces to include high-speed broadband networks that support their blended work and play lifestyles. And with energy consumption frequently part of public policy and building codes, these networks must also contribute to green energy practices.

The Nokia Optical LAN solution provides an eco-friendly, future-ready foundation for modern, clean, green and progressive properties by enabling communication and interaction on a single, unified, ultra-broadband infrastructure.

**Optical LAN outperforms traditional LAN**

Optical LAN brings the LAN up to light speed. It uses fiber-optic cable instead of copper and the Gigabit Passive Optical Network (GPON) transmission protocol. GPON is used to deliver commercial and mission critical broadband services to millions of users worldwide. It outperforms copper-based LAN in all the key criteria:

- **Capacity.** GPON delivers 2.5 Gbps downstream and 1.2 Gbps upstream on each fiber so you can converge separate networks, eliminate bottlenecks and deliver gigabit speeds to every user
- **Cost.** Optical LAN is both cheaper to install and cheaper to run than a traditional LAN
- **Security.** GPON provides military-grade security and carrier-grade reliability
- **Longevity.** Fiber is future-proof, robust and scalable, providing value for 50+ years
- **Flexibility.** Deploy anywhere as fiber supports a smaller bend radius than copper cabling and is resistant to signal and noise interference
- **Simplicity.** GPON is a mature technology, designed for simplicity and efficiency, easy to understand and manage
**Reduce costs from day one**

Optical LAN costs significantly less than a traditional copper-based LAN. For example, in a new installation with 2,000 connections across 10 floors, CAPEX savings are 56% and OPEX is lower by 54%. Which makes Optical LAN a sound investment for both upgrades and greenfield deployments. Savings come from the following areas:

- **Operations.** Maintain a single network by converging voice, video, data, surveillance, access control, security, and Wi-Fi® onto one simple, centrally-managed LAN
- **Energy.** Optical LAN equipment needs less power and cooling
- **Cabling.** Fiber is cheaper to install and easier to maintain than copper. It’s also more efficient: fewer cables are needed to connect users and deliver services
- **Real estate.** Reclaim server rooms and additional floor space with smaller and fewer network elements and replace bulky copper bundles with space-saving fiber
- **Expansion.** Optical LAN covers 200x more area than traditional LAN, making for easy expansion to new campus sites or office floors
- **Long-term.** Fiber is more resilient than copper and is the only medium with unlimited bandwidth potential

**Optimize precious real estate and generate new revenues with an Optical LAN**

The Nokia Optical LAN infrastructure requires less cabling, fewer racks, LAN switches and patch panels than a copper-based LAN. This eliminates the need for telecom equipment closets on each floor or at every 100m. As a result, Optical LAN enables large savings on capital and operating expenditure. And the floor space freed up by eliminating unnecessary equipment can be sold or leased more profitably.

Optical LAN helps developers conform to green building standards by enabling lighter building loads and significantly lower energy consumption and air conditioning requirements. In addition to being eco-friendly, this allows developers to integrate green and clean operations in all developments.

Because of the ease with which fiber can be deployed it is ideal for intelligent buildings as it can connect building management systems and sensors wherever they are located. This same network approach can be applied easily to Smart Communities that stretch to 20 km in any direction.

The Nokia Optical LAN also allows developers to take advantage of new network business models, where local regulations permit. With an ultra-broadband network based on industry standard PON technology, developers can choose to own the network access rights and sell or lease these rights to independent service providers and operators.

**Nokia: bringing broadband innovation to real estate developments**

Nokia is the world leader in fixed access technologies. We have 20+ years of broadband experience, and our equipment powers some of the most advanced fiber networks in the world.

The Nokia Optical LAN solution is designed to help you enhance the guest experience and slash costs. Contact your nearest Nokia partner today.

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![Optical LAN vs Ethernet LAN: cost comparison for 2,000 end-points over 10 floors](chart)

- **CAPEX ($)**
  - Optical LAN: $56,000
  - Ethernet LAN: $112,000
  - 56% savings

- **OPEX ($)**
  - Optical LAN: $18,000
  - Ethernet LAN: $29,000
  - 54% savings

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