



In 2004, the firm Teknika HBA was commissioned by **ING Canada**, a major insurance company as a consultant in civil, structural, mechanical and electrical under the expansion project of 10,000 m² on a six-storey building at 2450, rue Girouard Ouest St-Hyacinthe.



Construction of the wing

The project was completed in five buildings where the budget and schedule were strictly respected. The challenges raised were maximum comfort and two major technical challenges specifically

1. maximize space
2. ensure optimal comfort for office space.

The use of partition walls in the structure as already presented in a final publication was part of the solution. But the mechanical-electricity was also a consideration for contributing to maximize floor space.

Moreover, expectations of ING Canada for the comfort level was very high, the existing part of the building is equipped with ventilation offering a sheath network of constant volume of hot and cold ducts, highly efficient system to maintain room conditions, but very expensive and energy intensive. The construction budget prohibits the ability to reproduce such a system.

Alternatives

The solution was systems types with variable volume and constant temperature for the core areas and multi-zone constant volume and variable temperature for the periphery. Terminal heating coils were installed on the periphery ventilation to heat the building. To maximize floor space, ING Canada had asked us not to install heating coil or electric baseboard on the wall outside, 90 mm grip for heating of 190 m perimeter a lot of additional surface build. **For cons, the building is extensively glazed and executive offices closed in front, glazed floor to ceiling had to be comfortable. The mechanical team has also been well advised to ensure circulation of air in which the drafts would be minimized.**

To meet the need of comfort, maximizing space and reducing drafts, the emphasis has been on the air diffusion. The high induction diffusers, European design, were used in the office space and cafeteria. The result was convincing. Imagine working spaces in a wedge of glass bottom to top, facing south; comfortable in all respects without base heaters and no effect of air flow. A rate of 3 ft³ of air per minute per square foot is released from the ceiling in the executive offices closed!

At first glance, the company thought the product was too costly, and considered installing the conventional product, however Teknika was able to secure the deal by demonstrating the overall savings of the entire project. Rather than price the job based on “piece” we showed the client that due to the large volume of air that can power the diffuser with high induction resulted in substantially reducing the amount of duct work, diffusers and other accessories typically required of the “conventional” materials. We evaluated in phase concept that ING Canada could reduce the cost of its work breakdown \$120,000 while having a better performance. The proposals have confirmed our analysis. This amount does not include the cost of the additional material (mortar, cement carpeting etc) required of constructing a building wider and longer to accommodate the baseboard/duct work system of conventional material.

To complete the comfort level, indirect lighting was installed in recessed ceilings. With the combination of comfort and a soothing light, ING Canada provides a more pleasant workspace.

Plans for the wing

After the base building phase, ING Canada has chosen to continue with the team of mechanical-electrical Teknika HBA to achieve improvements in the company's kitchen design. The kitchen, cafeteria, offices, computer room and washrooms were built. ING Canada was able to take possession of its new space in December 2005 as had been expected.

Alterations and upgrading west wing

Immediately after, Teknika HBA had assisted the client in the preparation of the redevelopment of the existing section of 8,500 m². The client wanted to restructure the training rooms and install a press room, while reproducing the quality standards of the new section. We recommended a comprehensive study of compliance with standards and requirements verified particularly in mechanics and electricity. This step has helped bring out a multitude of non-compliance with fire safety in a building nearly 60 years that the client had no idea. Teknika HBA has assumed leadership of the project and advised the customer to complete the project within a tight deadline, which was met.

To meet the standards, the main technical interventions were:

- adding sprinklers;
- integrity of the building against the spread of fire;
- replacement of fire alarm system;
- replacement diffusers and lighting fixtures;
- cleaning and balancing of ventilation.

Our collaboration with Sodeplan Duclos Fournier and Albert Jean Construction has helped transform the old section of the building according to the highest standards of aesthetics, comfort and safety of buildings ING Canada. **Today, Fall 2006, the two wings of the building are equally enjoyable for staff despite the difference in construction time.**

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