

SERVICES

The various services provided by Thermtech in the field of new, expanded or renovated homes, encompass the full spectrum of activities from the **designing** of the house, to **drawing** up the plans, to the **management** of construction sites. Thermtech also offers expertise services, whether to they are to advise, solve problems or document litigation. Thermtech is also actively involved in **research and development** in order to enhance and improve construction techniques as well as develop new products for optimizing energy efficiency in buildings.

The design of the homes is carried out in close collaboration with our customers' needs. Various techniques have thus been exploited to date:

- Active and passive solar energy;
- High energy-efficient structure and insulation;
- Straw bale home;
- Hardwood post and beam construction home;
- Scandinavian-style log home;
- Integrated greenhouses and solariums;
- Insulated concrete forms constructions;
- Green roofs;
- ...

THE DESIGN

The **designing** of spaces, facades and the immediate environment of a house (new, expansion, renovation) is always conducted **in close collaboration with our client**, taking particular care in integrating his or her needs, whether spontaneously expressed or not, so that with our contribution, the actual elaboration of the house culminates into a truly personalized home.

While the process requires an open-mindedness on the part of our client, it requires just as much of ourselves : **we must be sensitive to the client's preferences and not confine ourselves to our own personal tastes.** Generally, the design of a house begins with the layout and orientation of interior spaces (rooms, traffic areas, outside access, ..) taking into account sunlight, exterior views, intimacy,... **Various alternatives are offered, each provided with their respective advantages and inconveniences, hence favoring enlightened choices.** The elaboration of facades is in keeping with the conception of the interior design and can thus take on many forms and styles. One could envision the design process as following a funnel-like action where everything becomes increasingly focused towards the ultimate goal of a personalized home **able to satisfy our customers' needs and assure their future well-being.**

Natural lighting and the sense of spaciousness are common features highlighted by our customers. **Energy efficiency** and the use of passive solar heating combined with a high-performance building shell and **indoor air quality** are major assets of our homes.

THE DRAWING OF PLANS

In conjunction with the design of the house, the latter is drawn using computer-aided technology in our workshop along with the elaboration of both technical and esthetic details in order to ensure a house that is desirable, efficient and easy to build. The detailed plans can henceforth be used to obtain permits and for a construction without surprises.

On the plans are included:

- the facades and clear and precise plans for each level of construction;
- efficient and easy-to-implement technical details;
- detailed construction descriptions.

The detailed plans thereby allow for a reliable estimation of building costs and a construction without surprises. **Coupled with a conscientious and responsible design, the plans also aim to minimize construction costs.**

THE CONSTRUCTION : MANAGEMENT OF CONSTRUCTION SITES

You can consult the article by Yves Perrier (in French) on this topic entitled «Construction de maison : gestionnaire de projet ou entrepreneur général» at the following link

http://www.guidesperrier.com/immobilier_construction/maisons_neuves/frame_immo_maison.html

Once the plans are prepared, the customer can then choose to have his/her house constructed through a general contractor with or without external verification of the work, or ask us to manage the construction site. In such event, specialized **contractors** are **chosen by mutual agreement** and **paid** by the customer **at cost**. Building materials can also be purchased directly from building supplies dealers along with **discounts normally granted to building contractors**. Site management services include:

- a **detailed estimate** of construction costs;
- **close follow-up** of construction work;
- **efficient scheduling** of trades;
- **resolution of** the technical **difficulties** and potential conflicts;
- **material take off** and **ordering of materials** when required;
- **administrative follow-up** with the collecting of appropriate documents (permits, invoices, account statements,...) and periodic summary of payments to be made.

Under the above conditions, each specialized contractor is responsible for his work and guarantees such work notwithstanding that monitoring and follow-up of the construction site by independent professionals minimizes the risk of construction defects.

TECHNICAL EXPERTISE

Independently of the work leading to the construction of a house, Thermtech also provides services in **technical building expertise** aimed at :

- **providing technical advice** in home construction or renovation (plans, construction, renovation, technical details,...);
- **solving technical problems** in existing buildings (drainage, structure,...);
- **documenting construction defects** for purposes of mediation or resolution in a court of law.

Over **one thousand expertises** have been conducted to date, notably in collaboration with more than sixty lawyers and more than forty court appearances as an expert witness. The theoretical and practical knowledge gained from studies in engineering and architecture as well as that acquired on the various construction and renovation sites provide us with a solid foundation for ensuring reliable and professional expertise that are valued by our customers, lawyers and the courts alike.

R&D ACTIVITIES

Since the early '80s, Thermtech has been active in research and development work in the field of energy efficiency and solar energy applied to buildings. Several construction principles developed by Thermtech are now incorporated in the construction industry, notably in the technical requirements for Quebec's energy-efficient home construction program, Novoclimat.

Another example is the development of the Integrated Mechanical System (IMS), which assembles under a single device the ventilation of spaces (fresh air and recirculation), space heating, domestic water heating and space cooling (**for further details, see SMI under Achievements, R&D**). A simplified version of this device enables the recovery of solar energy surpluses present in buildings for domestic water heating and partial space heating (**for more information, see the article in french "Chauffez mieux, polluez moins"**)

Research and development work has been done with the support of CMHC (Canadian Mortgage and Housing Canada), NRC (Natural Resources Canada), NRCC (National Research Center of Canada), EMR (Energy, Mines and Ressources Canada), RNQué (Natural Resources Québec).

