

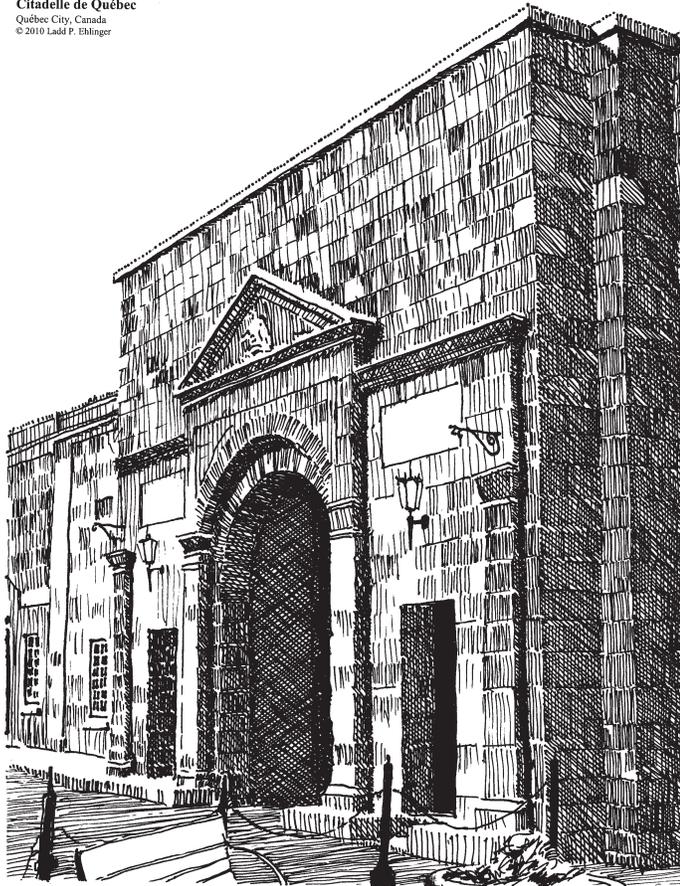


ARCHITECTURE

EHLINGER & ASSOCIATES

SECOND QUARTER 2010

Citadelle de Québec
Québec City, Canada
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Citadelle de Québec

The Citadelle (in Canada, the French Name is used both in English and in French), sits atop Cap Diamont, next to the plains of Avram (Abraham) in Québec City, Québec, Canada. Today, it is still functioning a military installation with troops from the Royal 22^e Régiment stationed there and as an official residence for several weeks out of the year of the Governor General of Canada. The Québec Parliament Building and numerous other provincial facilities are nearby just outside the walls of this historic fort.

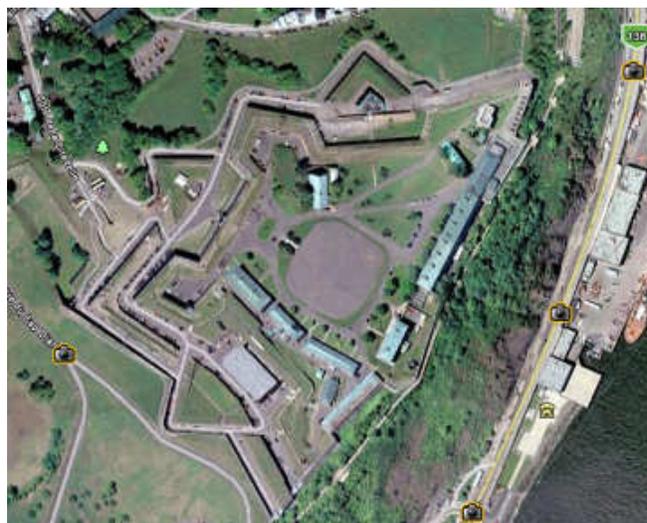
The present day star-shaped Citadelle was built by the English in 1820 - 1831 to replace earlier facilities in the same location. These earlier facilities were attacked by the Americans during the Revolutionary War between the U.S. and the British. Cap Diamont is the highest ground in the area and overlooks the St. Lawrence River such

that whoever controls this high ground controls the entrance to all of the Great Lakes of North America and thus the entrance to both the U.S. and Canada.

The first construction on this site was a protective wall that was built in the 17th Century under Louis de Boade, sieur de Frontenac. A plan of fortifications was then developed by the French Military engineer Jacques Levasseur de Néré (1662-1723) and was approved by Louis IV's commissary general of fortifications Sébastien de Le Prestre de Vauban in 1701. Additional extensive work took place in 1745 under the direction of

Citadelle is the result of efforts by Frederick Hamilton-Temple-Blackwood, 1st Marquess of Dufferin and Ava, Governor General of Canada (1872 - 1878), who also established the Citadelle as a vice-regal residence. (Note the double hyphenation of his name!)

Vauban popularized the construction of forts in the manner in which the Citadelle is designed and built. They are characterized by bastions at the outside corners that are pointed in plan (less than 90° corners), constructed of thick stone or brick masonry walls and masonry barrel vaulted casements, all backfilled with copious quantities of earthen fill that is usually mounded on top such that the crown of the fill is considerably above the tops of the walls. There was no waterproofing consideration given in the construction, so they were typically damp and dank inside the casements. The perimeter outer walls established a central courtyard where other buildings such as hospital, barracks, and powder magazines were built. There usually was a perimeter redoubt or retaining wall that established a grassy or watery moat that was bridged by a drawbridge at the sole entrance. This issue's print of a sketch by Ladd P. Ehlinger is of the main gate from the courtyard side.



The intent was to provide protection from the largest canon projectiles at the time. Forts Pike and McComb that guarded the Rigolets and Chef Menteur Pass entrances to the waters about New Orleans were built about the same time as the Citadelle, and resemble it design-wise but are of brick masonry rather than stone masonry.

These types of forts are no longer built as the technology of the armament firepower has outgrown them. Today's "bunker buster" bombs and smart bombs have totally obsoleted all forts like this.

French military engineer Gaspard-Joseph Chaussegros de Léry. The British did all of this work as a defense against the Americans. The preservation of the

technology of the armament firepower has outgrown them. Today's "bunker buster" bombs and smart bombs have totally obsoleted all forts like this.

Micro Architecture

by R. Perrin Ehlinger

In reaction to the glut of oversized luxury homes that were popping up all across the nation before the housing bust, a tiny architecture movement was slowly gaining ground. Literally.

Called Micro Architecture, or Smallchitecture, it's a bizarre mix of minimalist space design with advanced technology. Most of these designs are less than 800 square feet, but they struggle (and occasionally succeed) to create a functional, liveable space for 1 or 2 people, with most, if not all, of the amenities and basic luxuries that people take for granted in day to day living.

The Smallchitecture movement began mostly as an outgrowth of the environmental movement, seeking to lessen architecture's impact on the environment by literally being less architecture. While useful as a design response to tight, expensive urban spaces, the movement has become best known for the creation of small, vacation dwellings, primarily for hard-to build-in places.

It's a similar idea to the Russian Dacha, which were second homes in the country and farmlands of Russia, dating back to Peter the Great. Originally large second mansions for royalty and the titled, they became something of a necessity dur-

ing the Soviet era, as a place for people to get away from the cities, to grow their own fruits and vegetables, to reconnect with nature; but there were strict limitations on size and amenities. This resulted in strange



communities of very small cottages and shacks on small plots of land.

Ironically, while Dachas in Russia have grown in size and affluence since the collapse of the USSR, here, the Smallchitecture movement seeks self-imposed limitations of space and use. It's a taking of the "Less is More" axiom to its maximum.

For our Louisiana readers, it might be easier to relate to a luxury Shotgun house... sawed off. For our Alabama readers, imagine a tricked-out Dog Trot cabin, without the trot.

To that extent, Smallchitecture de-

mands a particular change of lifestyle and habit in order to live in one of these structures long term. Naturally, this means this movement will likely never be more than an interesting and passing fad, applicable in the long term only to areas with the tightest space restrictions, or limited stay uses, like a hotel room.

The M-CH (Micro Compact Home), a cube of roughly 8'x8'x8'. By Britain's best known Smallchitect: Richard Horden.

<http://www.microcompacthome.com/>

Incandescents: Not Dead Yet!

by R. Perrin Ehlinger

When Congress passed a tough energy efficiency standard for light bulbs in 2007, it looked to be the end for Thomas Edison's invention which ushered in the modern era over a century ago: the incandescent light bulb.

The new standards are so stringent, that there are no tungsten filament lighting products on the market that can meet it, leading many people to believe the law was specifically targeted at incandescents.

Not so fast! Two scientific advancements may be bringing incandescents right back to the shelves, perhaps before they are removed (2012 is the deadline). The first is a special reflective coating that can be applied to the inside of the glass bulb. This coating reflects heat, not light, back to the filament, where the heat is converted into light. Lab results achieve a 50% increase in efficiency, but outside the lab only 30%.

But wait, there's more! A scientist at the University of Rochester has experimented with lasers on tungsten filaments, and has discovered a flash exposure method which rearranges the molecules of the filament so that they produce twice as much light for the same amount of power.

Together, these two advancements may increase the efficiency of incandescents to four times their current capacity; more than enough to meet the new efficiency standards. They still won't be as efficient as fluorescents, and nowhere near LED, but if they are just as inexpensive, then the cost trade-off may still be equivalent. We'll have to see.

So, if you can't stand the light quality of compact fluorescent bulbs, or if you desire to have dimmable lights that actually dim below 60%, just hang in there for a year or two, because they'll be back. And they'll be better!



Travelodge's prototype for a self-contained, mobile hotel room.

<http://been-seen.com/index.php/articles/go-cabin/travelpod>



The "Lifepod", capable of suspending from trees, or floating on pontoons. Pre-equipped with a functional shower and toilet. <http://www.kyuche.com>