Low impact – high density residential development

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Recent developments in Toronto have seen the reemergence of mid rise high density housing projects. They provide new alternatives to typical postwar low rise/high rise extremes.

Introduction

The Toronto context

By happy coincidence, I happen to live in Toronto. In the past twenty years, it has become one of the best and most livable cities in North America. When I first moved there in 1977, it was a sleepy town nicknamed ‘hogtown’ because of the agricultural fairs that took place there. You couldn’t go into a restaurant and order wine without a meal, you couldn’t even get a beer at a ball game. It has grown, however, into a modern 24-hour cosmopolitan urban environment.

Today, the city is a vibrant amalgam of nationalities from around the world, often in quite significant numbers. It has an active and safe inner city. It is a major English language theatre centre. While Toronto has its problems, the city has avoided the devastation that visited many American cities. In part, this has been due to our different cultures, especially in the area of public welfare. We are much more community orientated. This stems from basic differences that flow from our very constitutions. Where America promotes the virtues of personal liberty and responsibility, we Canadians have a bill of rights that has a clause allowing the government to put community concerns over personal rights, ‘when it can be justified in a free and democratic society’. Thus our social safety net prevents some of the downward spiral that results in congregations of devastatingly poor people in ever poorer and more dangerous neighbourhoods.

But social policy alone did not bring Toronto to where it is today. City planning, active local communities, enlightened political leadership, a dedicated design community (and luck) have resulted in positive design manifestations at both the macro and micro level. Built forms have been developed which have resulted in an ability to redevelop downtown brown fields, create sensitive infill projects, and intensify development along the edges of the arterial network, which in the downtown areas, surround stable residential neighbourhoods. Public transit, including one of the few economical tramway systems in operation on the continent, has been maintained and reinforced by the redevelopment and intensification in the city. The fact that expressways were never allowed to carve up our neighbourhoods was also a major positive influence.

Innovative housing and mixed-use typologies were allowed to flourish throughout the city. Though sometimes difficult to get approved initially, they contributed greatly to the preservation of inner city neighbourhoods by continually invigorating them with appropriately scaled and paced development. Once a project has been built, I have personally had people come up to me after a hard fought battle to get a project approved, to indicate that, well, the project wasn’t so bad after all.

The rationale for intensification

We noticed that this late supportive reaction was a frequent response to our projects, and it spurred
us to investigate whether we could develop housing typologies that would garner community support from the beginning of the process, instead of only at the end. We thought we could thereby speed up the approval process, reduce costs for our clients, and build community responsive projects that had benefits beyond our own building site, through contributions to community revitalization and sustainability through intensification, at every scale. Since our practice transcended urban/suburban borders, we wanted to find solutions in both the inner city and regional context.

The timing of this realization was critical, because we couldn’t have developed these newer friendly high density housing forms before about 1985. In 1993, I spoke at an innovative housing conference in Vancouver, and many of the projects illustrated in this paper were only in the planning stages. They can now be reported as fact. While these projects proved very successful, they are not all transferable in every situation. Some key prerequisites had to be in place for these intensified building forms to be made viable, particularly in the urban setting.

- Development pressure and a high land value must be in place to permit higher density.
- The economics of higher density construction must work within the marketplace.
- A certain level of political maturity had to be developed to accept intensified built form.
- Local planning rationale for higher densities must be precedent.
- A high design quality must be achieved to enable the public to be won over.

Housing typologies: pre-war–post-war

A short historical perspective on built form is a good introduction to the context of these low impact high density built forms.

Around the turn of the century, mid-rise high density projects were the norm in most urban areas. The suburbs had not got into their stride yet, and high rise was an exception, except in the biggest cities. After the Second World War, the suburbs started to explode, mostly in an unsustainable low density form. Whatever high density that was required was accomplished by high-rise buildings. The effect was a juxtaposition of two-storey and twenty-storey buildings. High-rise buildings overwhelmed and overshadowed in urban areas, while they sprouted like mushrooms in fields of suburban low-rise, low density single family homes.

Transitional residential mid-rise built forms between these two extremes were abandoned. It became difficult even to talk about these typologies because the public did not understand them. Politicians merely reacted to the public perception, and municipal planners were educated at a time when these two extremes were the only accepted built forms around. The model became one of making it easy for cars to get around, ignoring questions of livability, any notion of alternative housing options, and abandoning any thoughts of a sustainable infrastructure for the community.

Current forces shaping development/redevelopment

Certain forces have emerged in the late 1980s and early 1990s that have made intensified projects more probable and easier to sell to the public.

- There developed a growing environmental awareness that we cannot keep expanding our cities the way we used to, nor could we squander the resources that had already been in place in our urban centres. More compact development could, in fact, reduce infrastructure costs for new communities, while more intense urban redevelopment can take advantage of existing hard and soft public services. Both approaches respond well to the fiscal constraints that most municipalities, state (or provincial), and even the federal government find themselves in today. There is no money for costly new infrastructure and the social as well as the fiscal cost of decaying downtowns is proving untenable.
- Demographics is slowly changing the make-up and needs of our baby boom generation, forcing us to re-examine how best to meet the needs of this ageing population.
- The so-called New Urbanism movement has emerged in the last few years and has focused on all these aspects of city building. Its proponents (of which I am one) developed a more rational, and at the same time, a more humane and beautiful set of city building principles to guide development.
While some of the projects illustrated were not thought up originally as New Urbanistic projects, they all fit into the New Urbanist paradigm. They are high density, contributing to the sustainability of the community. Yet they are low impact low- and mid-rise buildings, that do not disrupt the neighbourhoods they are located in, and enjoy considerable market success, as well as community support.

Low impact high density residential building forms

The following five examples all bear out some aspect of our original goal of creating a more neighbourhood friendly, more easily approvable project scenario, while achieving higher than normal densities. Interestingly, they cater to widely different markets, but still contribute to their neighbourhoods and communities as well as their own residents. The Castle Hill terrace townhomes, a mid-town Toronto industrial re-development project, had 15 foot wide units that sold for over $100,000. Two other Toronto projects had units selling for as little as $119,000: the Sloane Square and Lennox Mews infill developments; Treetops I and Treetops II are suburban ‘New Urbanistic’ greenfield developments in Oakville, a upscale suburb of Toronto. Selling prices here started at $139,000 and went to $169,000.

Castle Hill

This first project was built on a derelict and abandoned industrial site in the heart of the city, adjacent to a high end neighbourhood, below one of the major landmarks of the city (Castle Loma), but surrounded by a railway to the south, a community college to the west, and a municipal archives building to the east (Fig. 1).

Our firm was brought in after an earlier high-rise proposal for the site had been turned down. Our client asked us to retain as much of the original density as possible. We designed a terraced townhouse project yielding 25 units per acre at two times site density. We achieved this by bringing the frontage for each unit down to 15’ 6”, putting all parking off a rear lane. This is the first time in several decades that a lane project had been proposed in the city. The lanes were designed to municipal standards so they could be assumed after construction.

We proposed to re-open Walmer road (Fig. 2), which now runs through the development. We created the oval in the centre, with a small park, as a central focus for a site that had a relatively hostile environment around it. We buffered the eastern edge with a linear park, on lands that had been abandoned from an earlier proposal to bring an expressway through the area in the 1970s. The architecture takes the form of buildings with townhouses incorporated in them, rather than being a collection of attached townhouses. This again was a first in many years. We chose the Georgian terrace housing look (Fig. 3) because of several factors: the location below Castle Loma; the stepping down we had to incorporate in meeting the drop in elevation from Davenport Road to the north and MacPherson on the south. And we wanted to take advantage of the fact that the absence of garages allowed us to develop a pedestrian-friendly, unique and beautiful elevation (Fig. 4).

The design of each unit is relatively narrow, but by eliminating corridors as much as possible, we were able to achieve room sizes greater than those that can be found in homes of twice the width. We also created a view through and up (Fig. 5), with many details to draw the eye, and stimulate interest.

The units were constructed with concrete walls between them. The use of cut stone from the Bruce...
Fig. 2. Castle Hill site plan (Gabor & Popper, Architects).

Fig. 3. View of Central Oval Facade (Photo by Lenscape Inc Photographs).

Peninsula in the Canadian Shield among many other high-end features really helped to capture the high-end market. Elevators were roughed in to every unit. There was a garden over the garage at the rear, and another one off the loft den accessed by a stair within the master bedroom on the top floor (Fig. 6). Finishes were equally impressive.

Fig. 4. View of exterior corner (Photo by Lenscape Inc Photographs).
had to come down to under $200,000. It can easily be achieved.

This is only the first of the projects illustrated to prove that high-rise densities can be achieved without resorting to high-rise building forms. This prototype also generates a very co-operative attitude from the neighbourhood, the planners and the politicians.

Sloane Square

This project involves the redevelopment of an institutional property set in the middle of a well-established, high profile residential neighbourhood. Its site is notable in that it sits among high-rises of 1970s vintage and beautiful turn of the century mansions just north of the University of Toronto. While the property was expensive, it was politically impossible to build a high density high-rise building in today’s politically active environment.

We proposed to demolish a plain 1950s wing, and preserve an older house that was also on the property (Fig. 7). We actually took our cue for the design from this old building. The site also had a beautiful large tree at the centre of the lot. We wanted to save this tree, as it offered a lot of character to the site, and incorporated it in a courtyard, open to the street, that was built into the project (Fig. 8).

The building is deceptive. It was designed to look like a compatible building, particularly in relation to the 3½-storey houses backing on to the
site. But by setting the first floor halfway into the ground, and putting the top two floors entirely within the roof space, we were able to achieve a six storey building that looked like a three-storey building (Fig. 9). A density of almost 90 units to the acre, higher density than the apartment buildings next door, was achieved with enthusiastic support of the neighbours, the planners and the politicians.

The building has back-to-back stacked units all accessible from a front door near ground level (no corridors or other common areas), while the top two floors are accessible via an elevator entered off a small lobby at the side of the building (Fig. 10). The unit sizes varied from 500 square feet attic-style units that sold in excess of $200 per foot, to larger 900 square feet units at the lower levels (Fig. 11). A parking garage for a

Fig. 7. Site plan (Gabor & Popper, Architects).

Fig. 8. Streetscape – six storeys look like three and a half storeys (Gabor & Popper, Architects).
limited number of cars (less than 1 car/unit) under the new additions allowed us to sell the parking spaces. We were able to get away with such limited parking because we were only a couple of blocks to a subway station.
We devised a careful wall assembly that allowed us to build a brick-clad wood frame building. Our building code allowed wood frame construction for four storeys if we sprinklered the building. Technically it is considered only a four-storey building because the lowest level is minimum 50% below ground level, and our top storey is a mezzanine, not considered a floor under certain conditions. Engineers devised a wall section that allowed for the differential settlement of the brick and the wood. Careful detailing allowed us to achieve higher than required levels of sound separation between units.

This type of project works best in urban high density areas, or where the market for smaller units exists. Nevertheless, this project went to market in the midst of the worst recession the city has seen in half a century, when nothing was selling. It sold out in two weekends!

People liked the higher density, the low condominium fees achieved by designing very limited common areas. People also loved the fact that they had a front door to their unit, instead of accessing through a corridor (Fig. 12). All in all, it was a good prototype for a price-sensitive market, where higher densities had to be achieved in non high-rise building forms.

Lennox Mews

Our Sloane Square client liked the project so much he bought the property across the street. Lennox Mews was developed as an evolution of our ideas for Sloane Square. We preserved and converted two historic buildings at the front of the lot (Fig. 13). We tore down the rear of the buildings, added units to these front units, and created a mews building at the back of the lot (Fig. 14a). An underground garage sits below the new buildings.

A later phase III was added with the purchase of yet another property to the south, on which we put another simpler stacked townhouse building.

For the mews building here, we eliminated the elevator and the corridors, making it more

Fig. 12. Front courtyard with protected tree (Photo by Peter Gabor).
Fig. 13. Streetscape with renovated houses at front, mews townhouses behind (Source: Tom Neely).

economical. We adapted the building section to provide for access to all units from one side (Fig. 14b). No mews accessed rear units. Instead, all units had a front door to the outside. The building section is equally interesting.

We created a through unit that was located half in the ground. What at first seemed like a liability was converted into a positive element, as we sold these as garden suites with gardens at the front and the rear (Fig. 14c). The next level up was also a through unit, and really appealed to older purchasers. On top were front accessed back units that had two floors and a mezzanine. There was no common area except for the garage.

Again, a high density was achieved. A variety of building forms were developed that helped market to a wider audience. Universal support also ensued and the project was quickly sold out.

These two projects have generated a lot of interest. The units appeal to empty nesters, first-time buyers, students and professionals alike. It is highly appropriate in settings where mass transit is close, and limited parking can be achieved. It also requires smaller unit sizes to achieve the extraordinarily high densities. Larger units are, of course, possible. It would still allow quite high densities to be achieved, amortizing high land prices very economically.

These urban solutions offer a neighbourhood-friendly way to achieve critical mass densities for transit and other municipal services. It allows for fast approval and fast construction. It offers apartment-style living with a townhouse flavour – a front door that leads directly to one’s apartment. Sloane Square won a design effectiveness award from the Toronto business community for the exemplary way it set affordable housing in a great environment, especially at a
point in the business cycle when it was important to show it could be done.

**Treetops I and II**

This project is located in suburban Oakville, an upscale bedroom community west of the City of Toronto. This was originally zoned for high density, but the market could not absorb any high-rise units, and Sloane Square units were too urban a solution for the site. Typical townhousing development surrounded the site, with front doors alternating with more prominent garage doors. Not a very friendly or eloquent facade.

In the face of initial opposition by town planners, we won them over to a scheme that allowed us to design very narrow (as low as 4 m or 14' 1") units to achieve a very respectable 19 units to the acre for this townhousing project. We were able to do this because we used the New Urbanistic technique of putting all the parking in garages off a rear lane, complete with visitors parking and snow storage areas, (a key concern in our climate) (Fig. 15a and b).

This typology allowed us to develop townhouse elevations that appealed to purchasers much more than the standard product that could be seen surrounding the site (Fig. 15c). A sceptical client was thoroughly convinced. In a familiar pattern, he bought a block of land next door, and we are developing plans for a larger lane community with similar friendly elevations.

**The neighbourhoods of St Davids**

This last example is a larger and more interesting version of the last one. It is included because it shows how the approach can be used on a comprehensive scale.

This project will reclaim an exhausted quarry (Fig. 16). It is a prototype for the redevelopment
Fig. 15. (a) Additional landsite plan; (b) original site plan and (c) front elevation or typical block of townhouses (Gabor & Popper, Architects).

Fig. 16. Site plan (Gabor & Popper, Architects).
of other properties the company owns. It creates value from a liability for them. Here too, we were called in after an earlier scheme with five- and six-storey buildings was found to be unmarketable in this rural district outside Niagara on the Lake, near Niagara Falls (Fig. 17).

We were able to retain higher than normal densities for our client, while eliminating the apartment blocks. The neighbours loved the plan. The town planners are eager to assist us in getting the plans approved. The marketing is about to begin.

Conclusion

Our attempts at creating higher density developments in street-friendly, neighbourhood-compatible, environmentally responsive building forms and planning frameworks is clearly marketable and profitable for our clients. At the same time, it adds to the sense of community in a way that has been lost for generations.

Appropriate typologies can be developed to respond to urban and suburban situations. Higher densities can still be street-friendly, transit-supportive, and yet provide an appropriate human scale environment that fosters interaction, promotes safety, offers a multifaceted market a chance to live in an integrated non-high-rise but still higher density environment.

Let us not forget the alternatives to typical post-war development.