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Surrey, BC Subdivision Leads Way in Incorporating Principles of Sustainability

UBC Design Centre for Sustainability, Vancouver, BC

Issue

In recent years, communities and developers have begun to take a new approach to planning subdivisions. Growing interest in sustainable development has led to projects that concentrate subdivision development, seek to improve a sense of community and set aside large green spaces for recreation. This approach also contributes to reducing infrastructure requirements, resulting in greater sustainability.

The first major undertaking in Canada to apply sustainable development principles to a subdivision development was the East Clayton project in Surrey, BC.

In January 1999, Council directed City staff to commence the preparation of a Neighbourhood Concept Plan (NCP) for East Clayton. Council also directed staff to explore the application of sustainable development principles, standards and practices during the NCP planning process. Financial impediments resulting from drainage problems in the lowlands and related stormwater

management costs gave rise to this directive.

The NCP preparation process involved identifying constituencies of interest, a series of workshops, a design brief, a planning design team, two charrette events and public consultation sessions.

The charrettes, held in April and May 1999, were each two days in length. The first aimed at identifying alternatives and systems, and the second aimed at developing specific subdivision patterns and standards. As well, a series of mini-charrettes focused on technical matters and design innovations. A complete description of the charrette process is contained in the East Clayton NCP document.

Plan

The University of British Columbia received an ACT grant to complete a background study and create, with the City of Surrey and a local developer, a model urban sustainable development project.



Entranceway to East Clayton

Source: James Taylor Chair in Landscape and Liveable Environments, UBC Design Centre for Sustainability

The project sought to address seven principles of sustainability:

1. natural drainage systems;
2. five-minute walking distances to transit and commercial services;
3. different dwelling types in the same neighbourhood;
4. detached dwellings that present a friendly face;
5. car storage and services handled in lanes at the rear of dwellings;

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6. a grid street pattern; and
7. narrower streets with lighter, cheaper, greener, smarter construction.

The ACT project would specifically address regulations related to stormwater management, street widths, habitat and stream protection, utility servicing and small lot sizes.



Denser housing and shorter setbacks contribute to better use of space.

Source: James Taylor Chair in Landscape and Liveable Environments, UBC Design Centre for Sustainability

Project team

The UBC Design Centre for Sustainability, the Pacific Resources Centre and the City of Surrey formed the main working committee. BFW Developments Ltd. provided the opportunity to test the principles in practice.

Results

East Clayton is an inviting, mixed housing community. Within it are small-lot starter homes, single-detached family homes and townhouses, a mix that ensures different family types with varying levels of income live in the same community. Welcoming homes are built near the street, back lanes accommodate vehicle storage, and services are within easy walking distance. Each of the seven principles has, to varying degrees, been met in the East Clayton development. In accordance with sustainable development principles, the East Clayton project achieved:

- ❑ higher than normal densities — ranging between 6 to 10 units per acre for low density, 10 to 15 for medium and 22 to 45 for high density — approved as part of the rezoning process;
- ❑ the inclusion of units that can be converted into secondary suites, through the introduction of a new bylaw, which also helped to legalize secondary suites city-wide;

- ❑ four-metre standard setbacks and front porches;
- ❑ a high percentage of blocks with access to rear lanes or private rear access easements;
- ❑ an interconnected street network that better accommodates transit; and
- ❑ wide tree-lined residential boulevards and water-permeable surfaces, which were unique to the project and required new engineering standards.

“It is a very different kind of place,” says Patrick Condon, of UBC’s James Taylor Chair in Landscape and Liveable Environments. “It looks different, with porches on the street, pedestrian sidewalks and a lot of different house types. People like the ‘walkability’ and the connectedness of the community.”

“I would highly recommend that other municipalities take a similar principles-based approach to sustainable development,” says Condon says. “Those seven principles are simple enough for citizens and their elected officials to both understand and remember, and at the same time are backed up by significant research.”

Lots in the East Clayton development sold faster than the houses could be built. John Turner with BFW Developments questions whether demand was driven by the appeal of sustainability or the strong local housing market. In Turner’s opinion, the project was not cost effective.

“But we’ve got to take a bunch of little steps [toward sustainability] and in five or 10 years we may look back on this project and say it was very beneficial as a first step,” Turner says. He believes other developers may take certain aspects of this project, such as the reduced impact on natural water systems, and successfully apply them to other developments.

Condon suggests a memorandum of understanding and/or a working paper should be in place between the stakeholders before a project is undertaken. The project team organized a series of meetings with interested parties and Condon believes a ‘round table’ process can help overcome possible conflicts and secure longer term commitments from participants. Condon notes that higher street development costs caused some of the project’s goals to go unmet.

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A single drainage system with swales and soft shoulders, instead of curbs and gutters, was rejected in favour of 'infiltration streets'. These streets drain water through slotted curbs and onto grassy areas, with detention ponds that naturally dissipate runoff. In addition, for liability reasons, a standard storm sewer infrastructure was required by the City to back up the natural drainage system.

"The cost of green infrastructure should be less than conventional infrastructure, and there are cheaper ways to do it," he says. "The East Clayton project didn't quite get there, but it must be done soon across the country.

"Every metropolitan area needs [a similar development] right now to achieve lighter, greener, cheaper and smarter infrastructure."

Related reports

The Headwaters Project: A Sustainable Community Development in Surrey, BC (The James Taylor Chair in Landscape and Liveable Environments, Vancouver, 2003)

The report is available from the ACT website. See "ACT projects & solutions".

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