Case-in-Point 2014

Progressive Pilot Projects

How Seattle's Living Building Deep Green Pilot Project Could Inspire a More Sustainable Winnipeg

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Abstract

Pilot projects have been used by cities to test new ideas, policies, and programs; they provide insight into the potential success or concerns of an idea before implementing it on a permanent basis. The sustainability movement has created a new demand for cities to execute such pilot projects. Many current by-laws discourage, prevent, or even prohibit the implementation of innovative sustainable principles and technologies. Cities such as Seattle, Washington, are working to encourage and promote the next generation of sustainable, or regenerative, environments. The City of Seattle has developed the Living Building and Deep Green Pilot Program to "encourage the development of innovative green buildings that can: reduce environmental impacts, test new technologies, and serve as a model for development throughout the region and country".The Province of Manitoba and City of Winnipeg are slowly embracing a more sustainable built environment, and the case of the Living Building and Deep Green Pilot Program may provide insight into how the City may implement and administer such a program. Taking a cue from Seattle's program will allow Winnipeg to warm up to new policies and processes, as well as maintain the flexibility to adapt them. The use of pilot projects could also help kick start a more sustainable culture

Figure 1. The newly completed Bullit Center, Seattle, Washington. Source: www.blog.archpaper.com

Introduction

Addressing our built environment is one of the most important concerns facing the sustainability movement today. Over half of the world's population is now living in urban centres, and the buildings that support these populations contribute to 38% of our greenhouse gas emissions, and account for over 40% of our energy use (Comstock, 2013; United Nations, n.d.).

Fortunately there have been significant improvements made to the design, technique, and technology of buildings in recent years. The result has been the construction of buildings that require fewer resources to build and operate, healthier and happier atmospheres for people, and recovered and restored ecological environments.

However, many of the techniques and technology that make these endeavors possible are restricted, or even prohibited by policies and regulations. Originally, these codes were designed with minimum standards for health and safety in mind, as opposed to alternative building strategies (O'Brien, DeNamur, & Powers, 2013).

Now we've come to a time where many of these regulations must be updated to enable and promote more sustainable construction practices (O'Brien et al., 2013).

One of the cities taking on this challenge is Seattle, Washington. Seattle is striving to be a leader in sustainability, with many initiatives such as a target of net zero emissions by 2050, and the recognition and preparation for the impacts of climate change (Gibson, 2013). Such progressive thinking has made the city an attractive option for sustainably oriented development (see Figure 1), and the planning department has shown a commitment to work closely with developers to identify and improve existing regulation (O'Brien, et al., 2013).

Background

Seattle's Living Building Deep Green Pilot Program is one initiative implemented by the City to help meet these objectives. Established in 2010, the pilot has three main goals:

1. Stimulate innovative development;
2. Encourage development that will serve as a model for other projects and will stimulate development of new Living Buildings; and
3. Identify barriers to Living Buildings in current codes and processes (City of Seattle, n.d.).

The pilot will be run until December 2015, or until 12 projects are enrolled in the Living Building Pilot, and one project enrolls under the Seattle Deep Green Pilot (City of Seattle, n.d.).

The pilot enables the innovative techniques and technologies required to meet these ambitious objectives by allowing certain departures from the Seattle Land Use Code (Bertolet, 2012).

The program requires no additional fees or time to participate, however projects have to partake in Seattle's customary design review process (City of Seattle, n.d.).

The pilot program accepts projects through two streams (see Figure 2). Under the Living Building stream, projects must be certified through the Living Building Challenge, a program administered by a third-party, the International Living Future Institute (ILFI) (City of Seattle, n.d.). This is considered to be one of the most stringent sustainable building certification programs in the world, requiring participants to go above and beyond conventional practices in an effort to create a future that is "socially just, culturally rich and ecologically restorative" (International Living Future Institute, 2012).

The success of a project is based on performance; buildings under the Living Building stream are certified by ILFI a year after the building is occupied, and the deep green projects are verified by the city. IF a project is found to be non-compliant, they will be fined based on total project costs.

SEATTLE DEEP GREEN STREAM

- Reduce total energy and water usage by 75%
- Capture and use at least 50% of stormwater on site
- Achieve 60% of the imperatives of the Living Building Challenge

LIVING BUILDING STREAM

1. Achieve full Living Building Challenge Certification
   - 7 petals (imperatives): site, water, energy, health, materials, equity, and beauty
2. Achieve at least 3 of 7 petals
   - Reduce total energy and water usage by 75%
   - Capture and use at least 50% of stormwater on site

Figure 2. The Living Buildng and Seattle Deep Green Pilot Program Stream requirements. Adapted from: www.seattle.gov

Figure 3. The Bullit Center. Source: www.buildingcapacity.typepad.com

Figure 4. Stone 34 by Skanska. Source: www.blog.archpaper.com

Figure 5. Schemata Workshop's Capitol Hill Urban Cohousing.
Source: www.schemataworkshop.com

Facts

To date only one project has been completed under the pilot. The Bullit Center is a commercial building that was spearheaded by the non-profit Bullit Foundation, and opened in 2013 (see Figure 3) (Hanscom, 2012).

The success of the project was contributed to the cooperation and collaboration between the organization and the City of Seattle (O'Brien et al., 2013). The Bullit Foundation carefully researched and documented any challenges and barriers to the process, providing valuable insight for Seattle's planning department (O'Brien et al., 2013).

Two other projects have registered for the pilot, and are still in the design review phase. Skanska USA has designed the Stone 34 project (see Figure 4), which will be a mixed-use facility and head office for Brooks Sports (Hanscom, 2012). A cohousing project from Schemata Workshop (see Figure 5) is also still in the works, and will be a mixed-use building featuring a rooftop farm (Hanscom, 2012).

Various departures from the Land Use Code have been granted for these projects in order for innovative ideas to be implemented. These have included variances on height restrictions, floor area ratios, and overhang size (Pennucci & Harris, 2013).

Outcomes

Challenges

As expected with an experiment such as a pilot project, Seattle has experienced some growing pains along the way. The program has had a lower enrollment than expected (Hanscom, 2012).

Financing has been suggested as one reason for the low enrollment; traditional funding for projects is hard to come by as banks are still hesitant to loan money to projects who are still considered to be a "high risk" (Hanscom, 2012). In addition to a lack of financing options, higher initial project costs necessary for the progressive design of the projects may also be deterring enrollment (Hanscom, 2012).

Seattle has also experienced some difficulty monitoring and verifying project compliance with the requirements for the pilot. The process and criteria for assessing the projects was not clearly integrated into the existing planning process, and the nature of the buildings makes typical inspection-based compliance difficult to assess (Pennucci & Harris, 2013).

Furthermore, the acceptance of the Stone 34 project also created some push back from ILFI, who argued that the building would not have been accepted into the Living

Figure 6. Local newspaper coverage of Stone 34. Source: www.seattletimes.com

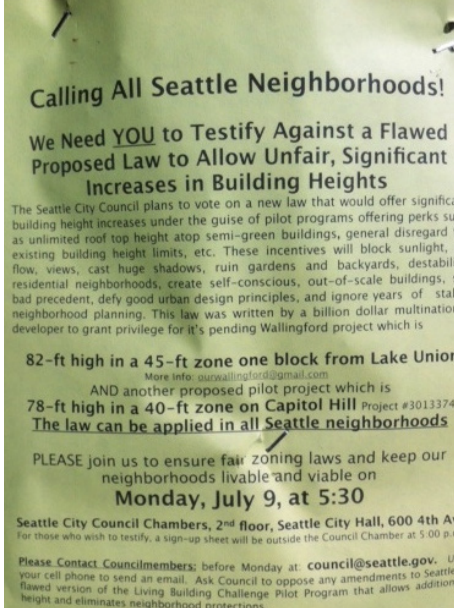

Figure 7. Local protest against Stone 34. Source: www.citytank.org

Building Challenge by their standards (Cunningham, 2013). ILFI has since argued that their brand "Living Building" be removed from the program name once the pilot has ended (Cunningham, 2013).

Finally, another setback occurred after plans for Skanska's Stone 34 project were made public. The building sparked debate amongst the community after it was granted an extra story that will block ocean views (see Figures 6 and 7) (Cunningham, 2013). Under normal zoning regulation, the story would not have been allowed, however it was granted as a departure as part of the pilot program (Cunningham, 2013). This has brought into question the legitimacy and intentions of the pilot program, and general conduct of the planning process in Seattle (Cunningham, 2013).

Next Steps

A year after the pilot had been adopted, the City mandated that a Technical Advisory Group (TAG) be established to review the program (City of Seattle, n.d.).

The TAG is comprised of planning department staff as well as local volunteers who are knowledgeable about sustainable development initiatives (City of Seattle, n.d.).

Since its inception, the TAG has reviewed the pilot program and recommended a number of updates and changes be made. One of these recommendations includes the removal of the Deep Green stream until the process and criteria of the option can be more clearly defined, or until a better option is found (Pennucci & Harris, 2013).

The TAG aims to show a continued interest and commitment to improve the program and promote further changes to the zoning and regulations (Pennucci & Harris, 2013).

Lessons Learned from Winnipeg

Figure 8. Construction of the Bullit Center. Source: www.citytank.org

Lessons Learned From Seattle

Although it is still in the learning stage, Seattle's Living Building and Deep Green Pilot Program can already provide some valuable lessons on implementing sustainable initiatives. They are:

- Ensure there is an educational component and community involvement in the pilot process
- Define a clear way to integrate pilot projects into existing planning procedures
- Define clear criteria and process to evaluate the success of pilot projects

Winnipeg has been a little slower to jump aboard the sustainability train, but is gradually improving.

The Province has mandated in it's green building policy that any building receiving provincial funding has to meet the standard of LEED Silver under the LEED green building certification program. Through the Our Winnipeg process the City created the guiding document "A Sustainable Winnipeg" that recommends many of the same initiatives that Seattle has implemented.

When it comes to building codes, we are fortunate says Richard Derksen, a building plan examination architect for the City of Winnipeg. The city's codes are objective based, not prescriptive based, so if an innovative idea can be shown to be as safe as code, examiners may accept it (personal communication, March 25, 2014). This provides some flexibility for innovative projects who are trying to push the boundaries (R. Derksen, personal communication, March 25, 2014).

We can amend our municipal codes in a somewhat timely manner, but many codes that apply to sustainable development must be changed at the provincial or federal level (R. Derksen, personal communication, March 25, 2014). Unfortunately this can be a timely and arduous process, which does not agree well with faster-paced initiatives like pilot projects.

Furthermore, there are may organizations and groups taking the opportunity to improve their sustainable practices on their own. Manitoba Hydro chose to build one of the Province's most innovative and sustainable buildings for their head office. Hydro Place (see Figure 9) is certified as LEED Platinum, and is a leading example of what collaboration and innovation can accomplish. There are also many other individuals and organizations working to push for a more sustainable city and province.

Figure 9. Manitoba Hydro's Hydro Place. Source: www.daniels.utoronto.ca

Recommendations

In collaboration with Mr. Derksen, several opportunities for have been identified which would allow Winnipeg to facilitate more sustainable initiatives similar to those in Seattle.

Introduce pilot projects

Winnipeg is notorious for being politically cautious and legislatively conservative, resulting in a city that seems to be ten years behind other cities. Pilot programs would enable the city to experiment with innovative and progressive ideas while maintaining a cautious approach.

Create overlay districts to test innovation at the neighbourhood scale

Similar to a pilot project, an overlay district would designate a specific area (similar to the SHED district) with specific departures from regulations in order to test new technologies and designs at a neighbourhood scale. Examples of projects could include district geothermal heating, wastewater treatment, and energy production. These districts are becoming more popular in response to climate change, as they provide relief to municipal systems and create more resilient regions.

Figure 10. Mayor's Symoposium on Sustainability, Winnipeg.
Source: www.facebook.com

Piggy back on other changes

Manitoba's Building Code and Energy Code for Buildings was recently amended. When code changes such as these come up, the City should take the opportunity to look at how their policies could also be updated to compliment them.

Provide incentives and tax breaks

The up front costs for progressive buildings can be significantly higher than conventional buildings. In order to recoup some of these costs and entice builders, a wider array of incentives or tax breaks could be offered. Incentives could also be offered to developers who restore and maintain our historic building stock.

Create alternative finance models

Funding for sustainable building projects can be hard to come by; banks aren't yet familiar with the risk associated with these buildings, or what challenges may befall them during the construction process, and are hesitant to invest. Credit Unions are becoming a popular source of funding, and alternative models such as crowd sourcing, cooperatives, and public-private-partnerships remove the risk from the bank or builder, and provide alternative options for financing.

Expedite the permit process

Seattle has several expedited permit processes, which provide additional incentive for specific projects.

Conduct more policy research on potential barriers & innovative solutions

Research is a proactive solution to identifying barriers to potential sustainable initiatives (see Figure 10). With the fast pace of technology and innovation, it would be in the City's best interest to have a position that was also aware of the latest advancements.

Figure 11. City of Winnipeg. Source: www.joe-lynn-design.deviantart.com

Conclusion

To conclude, Winnipeg is gaining momentum on the sustainability front (see Figure 11). Seattle provides a great example of what can be accomplished with a little innovation and risk. When coupled with Winnipeg's passionate, creative, and dedicated citizens, the city has the potential to transform into a leader of urban sustainability.

Change will not come if we wait for some other person, or if we wait for some other time. We are the ones we've been waiting for. We are the change that we seek.

- Barack Obama

Resources

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A special thanks to Richard Derksen for sharing his insight, experience, passion, and inspiring ideas for the future of Winnipeg.