

# Sample Home Designs



CASE STUDY | DECEMBER 2023



*The City of Kelowna's Infill Design Challenge (IDC) 2.0 First Place Winning Design by Miguel Angel Jimenez Gonzalez Cruz*

## 1. Background

The City of Kelowna is one of Canada's fastest growing cities. Infill housing is a significant piece of City's overall growth strategy and supports many of the housing goals established in the [2040 Official Community Plan](#).

Historically, zoning has been the biggest barrier to building much-needed housing supply. To address this barrier, the City is focusing on expanding permissions, unlocking land for building infill, and streamlining development processes to create more homes more quickly. Focusing on promoting and encouraging new forms of infill development, City staff hosted the Infill Design Challenge Competition (IDC 1.0) in 2015-16 and [Infill Design Challenge Competition 2.0](#) in 2021.

### Policy/program

Sample home designs

### Municipality

Kelowna (2021 population: 144,576)

### Gentle Density Types Involved

- Secondary suites
- Two dwelling housing
- Carriage homes

# 2. Key Players

## Municipality

- Policy and planning department
- Building department
- Infrastructure department

## Stakeholders

- Designers, architects
- Homeowners
- Developers
- Competition judges (from industry)

# 3. Description of policy/program/project

## Infill Design Challenge 1.0

This first design challenge focused on laneway-accessed housing. Winning projects were intended to act as catalysts, inspiring greater achievement in the design of sensitive infill housing, strengthening community and developer support along the way. Through this first competition, two winning designs were selected and formed the basis for new sensitive infill housing regulations. The competition cost approximately \$10-15,000.

### Design parameters

A community panel, including representatives from the Urban Development Institute, the Canadian Home Builders Association, architects, home designers, SD23, Interior Health Authority, Okanagan Mainline Real Estate Board, affected Neighbourhood Associations, and area residents, worked with staff to create the rules of the Infill Challenge competition and define the criteria against which submissions would be evaluated.

### Infill challenge rules

- Must be a new (to Kelowna) form of sensitive infill housing not presently permitted under current City of Kelowna Zoning Bylaw No. 8000 regulations.
- Designed for a single lot (15m x 37 m), with lane access only. Up to 4 units.
- Must provide adequate off-street parking.
- Must meet all applicable standards of the current BC Building Code.

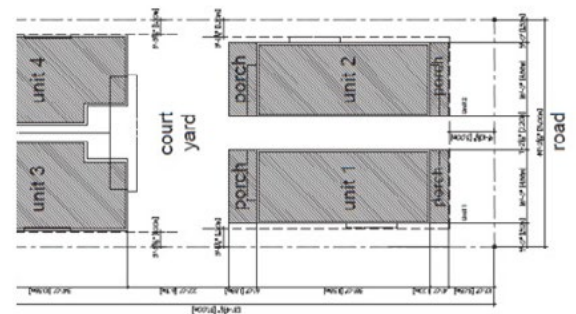


Figure 1. Design 1: Inhabit 4

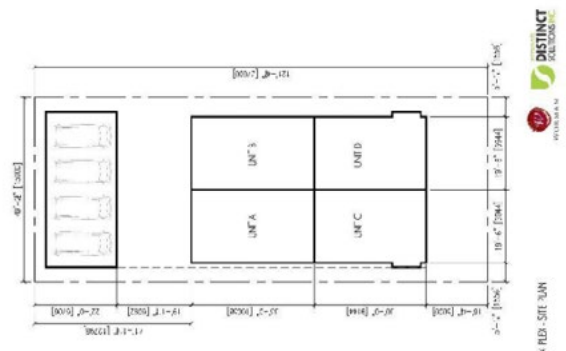


Figure 2. Design 2: Simple

### Evaluation criteria:

- Respect for context – designs should respect their local and neighbourhood contexts.
- Limit bulk – the bulk and massing of buildings should not dominate surrounding development.
- Positive relationship to the street – buildings should demonstrate an open and positive relationship to the street through front porches and other tools.
- High-quality open/green space – designs should provide ample, accessible open space for residents.

### Submissions:

10 submissions were received. The two winning designs each allowed for four units on a single lot and formed the basis for a new infill housing zone. The first design comprised two single detached units at the front of the site and two further units above the garage at the rear of the site. The second design provided all four units in one compact building, which closely resembled a single detached dwelling.

### Business arrangement

The designers of the winning designs were not monetarily compensated; instead, the City awarded the winning designs with the ability to be fast-tracked, which incentivized homeowners/developers to purchase the detailed building plans for approximately \$5000 per design. Any changes to the designs were taken on by the homeowner/developer and the designer. Homeowners/developers still needed to work with an engineer to ensure the project was built to all applicable standards.

## Infill Design Challenge 2.0

IDC 2.0 was held over nine months between 2021-2022 to further explore design ideas and opportunities for future infill in more neighbourhoods that largely did not have laneway access. IDC 2.0 received 56 design submissions; three finalists and one honorable mention were awarded. The Infill Design Challenge cost <\$30,000, which included honoraria for jury and some media costs. The City partnered with local industry for sponsorships.

### Design parameters

A [design brief](#) was developed and provided to participants that included a description of:

- Competition subject area
- Competition outcomes
- Eligibility to participate
- Design competition parameters
- Submission requirements
- Design competition timeline
- Submission and evaluation process
- Awards



Figure 3. Design 1: Inhabit 4



Figure 4. Design 2: Simple



Figure 5. Second place, Bluegreen Architecture



Figure 6. Second place, Bluegreen Architecture



Participants in the competition were asked to provide a rationale for how their proposal could provide diverse forms of affordable housing, contribute to an inclusive community with a high standard of livability, increase resiliency in the face of climate change, and achieve design excellence

### Evaluation criteria

A panel of judges comprised developers, builders and architects. Evaluation criteria comprised the following:

- **Diversity:** Increase housing supply through a diverse range of ground-oriented infill housing options
- **Affordability:** Improve housing affordability and reduce barriers to building affordable housing
- **Creativity & Context:** Design new infill housing that demonstrates innovation and creativity while acknowledging and complementing its existing context
- **Resiliency:** Enhance the resiliency and sustainability of neighbourhoods in the face of climate change
- **Inclusivity & Livability:** Contribute to inclusive, complete neighbourhoods and ensure housing serves the needs of current and future residents

In addition, jurors considered whether the proposals were feasible and broadly applicable across Kelowna's Core Area.

### Business arrangement:

The top three design submissions were recognized with a cash award:

- \$10,000 first place
- \$5,000 second place
- \$2,500 third place

For homeowners/developers wishing to use the winning designs, they can reach out directly to the designer and work directly with them.

## 4. Outcomes

After the IDC 1.0, the City implemented a “fast-track” program that approved applications with the two pre-approved designs (and exact site plan) in about two weeks. Development permits and building permits for these applications were issued by staff, removing the requirement for Council approval. (Homeowners/developers could customize the designs, but they would no longer be fast-tracked. For those custom designs to be built on an RU-7 lot, the new zone created, approval processes took about six to eight weeks as the lots were pre-zoned and the development permits were approved by staff.)

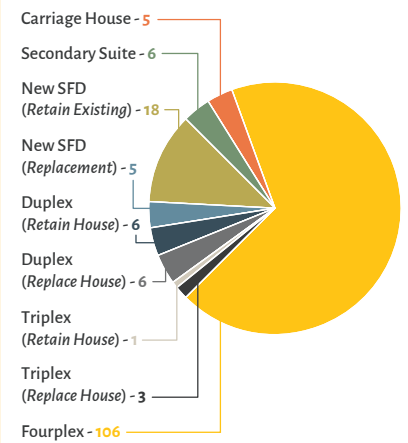
Four OCP amendments were made in November 2016, to implement the new zone, and a new OCP has been developed since then.

The designs produced through the IDC 1.0 informed the creation of a unique 4-dwelling zone called **RU-7**, which was applied (i.e., pre-zoned) to over 800 properties. Of the pre-zoned lots, 15-20% have redeveloped within 5 years, yielding:

- 156 building permits
- 494 units constructed
- 368 net new units

Approximately 50 homeowner/ developers used the pre-approved designs.

RU7 Building Permits | Jan 2017 - Nov 2022



While allowing more density and flexibility, the RU7 zone allowed only modest increases in the size of buildings when compared to the previous RU6 zone. Key differences are shown below:

REGULATION	RU6	RU7
Max. Units	2	2-4 dwellings (depending on lot width)
Max. Height	2½ storeys or 9.5m	2 storeys or 8.0m
Max. Site Coverage	50% (including driveways and parking areas)	55%
Min. Front Yard	4.5m	4.0m
Min. Rear Yard	7.5m (1.5m for accessory buildings)	0.9m
Min. Side Yard	2.0m	1.2m

Following the IDC 2.0 competition, winners were featured by the City of Kelowna through media releases and website postings. IDC 2.0 outcomes are informing updates to the City's Infill Options Program, and staff are exploring tools such as pre-approved plans, zoning updates, and pre-zoning.



# 5. Lessons learned

## Facilitators

- Pre-zoning facilitated a shorter development application process.
- Pre-approved plans attracted significant interest from developers; many pre-approved designs were repeated and a handful of local developers became very efficient at building those designs over five years.
- Pre-approved designs helped jump start infill development as desired.
- The design competitions helped generate community excitement and more profile about infill development.
- They helped build relationships between the City, designers and the community.

## Challenges

- The design competitions required more resources than an RFP process, e.g., needed a cash award, and international entries (and awards) posed additional logistical challenges.
- Several instances of the same fast-track plans were developed next to each other, leading to a more monotonous, repetitive form of development; infill housing would benefit from a higher level of design excellence.
- There was a demand for some larger driveways than initially anticipated in the RU7 area, which impacted site coverage.
- A new approach was needed to deliver infrastructure improvements (including water servicing, stormwater management and frontage) that involved securing funds from developers upfront to pay for improvements later on (deferred revenue approach); there are still challenges with this approach that the City is still grappling with.
- The pre-approved designs were successful in generating new, more attainable forms of ground-oriented rental and ownership housing but the units produced were generally not considered “affordable” housing.
- There were challenges in providing infrastructure such as trees, boulevards, and sidewalks in infill neighbourhoods, which affects livability.

# 6. Next Steps

The City recognized that the RU-7 zone will need updating over time (including a review of the administrative process and ways to encourage greater urban design diversity and reflection of community needs for infill). Developers can still use IDC 1.0 designs and receive a fast turnaround on development applications. The City is taking the learnings from the IDC and developing its Infill Options Program, with the following objectives:

- Introduction of new zoning regulations in Core Area Neighbourhoods (C-NHD)
- Faster and easier approvals processes
- Identified costs for infrastructure improvements
- Increased options for attainable housing
- Clear communications and guidance materials with the public and development community

# 7. Resources

- | [Infill Design Competition description](#)
- | [Infill Options Project](#)