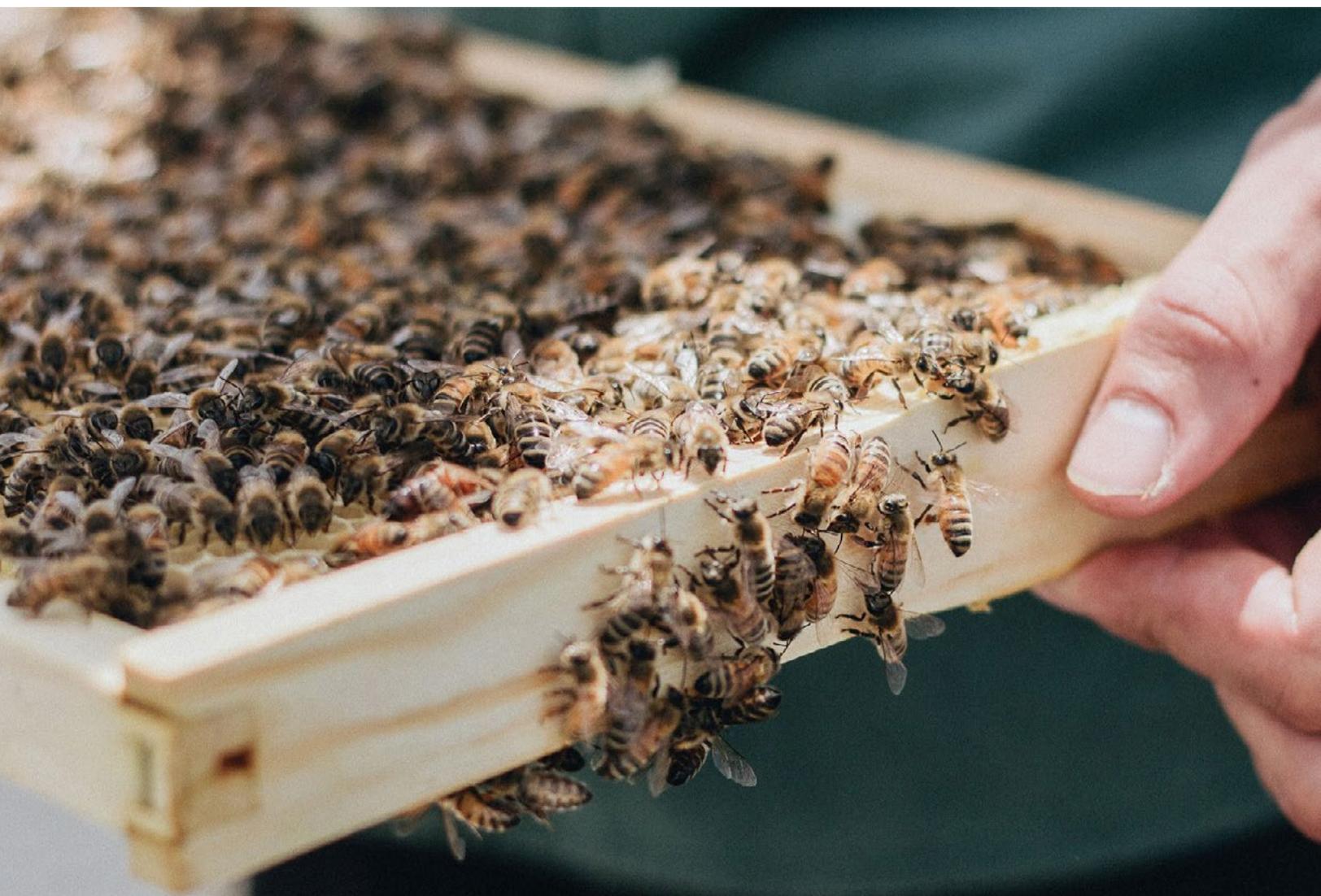


# 2019 Guide to Urban Beekeeping



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Dear Friends,

You know better than anyone that the general population is migrating to urban centres. By 2030, more than half of the world's population will live in cities.

Collectively, the environmental challenges we face through this migration are enormous. History has shown that change often germinates in metropolitan areas before blossoming in the suburbs and countryside. As owners, managers and suppliers into the commercial real estate industry, you know that we need to become the root of change by reducing our ecological footprint.

Some environmental challenges have been highly publicized, while others go somewhat unnoticed by your tenants. One of the simplest, most people-focused ecological initiatives you can take involves bees. Urban apiaries have become sought-after and desirable amenities that contribute to tenant retention and engagement. By offering healthier, greener spaces, building owners and managers contribute directly to the health and well-being of tenants, as well as substantially improving their satisfaction and the value they place on the building.

Let's face it: certain environmental initiatives are more complicated to implement than others, while some require major investment. The installation of a hive in an urban environment, however, requires minimal resources while bringing a flood of direct and indirect benefits, notably increased social and ecological welfare.

We are proud to present you with the following guide to allow you to dive head first into the universe of urban beekeeping and to better understand how a hive can be a consciousness-raising tool and promoter of important change.



**Benjamin L. Shinewald**  
**President and Chief Executive Officer, BOMA Canada**



# Summary

## Where is the interest for urban beekeeping coming from?

- Urban agriculture is an ever-growing industry which consists of producing food within cities.
- This rise of urban beekeeping has been supported by a general concern for the fate of pollinators.
- Today, urban beekeeping answers more and more to objectives that largely exceed economic necessity.

## Are bees disappearing?

Populations of bees, butterflies, bumble bees and other pollinators are declining around the world.

## Why are bees important to us?



- Bees are responsible for the pollination of more than 130 varieties of fruits and vegetables around the globe.
- In Canada, it's estimated that bees' pollination services contribute a harvest value of \$4 to 5.5 billion.

## How can we reverse this trend?

- Conventional agricultural practices need to radically change in favour of more sustainable agricultural practices.
- The honey bee is an excellent ambassador for the thousands of other bee species, allowing us to shed light on the dangers all pollinators face.

## Why are cities a pollinator's paradise?

- No pesticides
- Abundance of floral resources
- Many sources of water
- Temperate climate

## Let's talk about stings.

Rest assured that honey bees are not interested in the presence of humans. Their daily quest is to bring nectar, pollen, resin or water to their colony to ensure its development. Unless aggression is demonstrated towards them, bees have no motivation to sting.

### Find the right partner!

Qualified, experienced companies like Alvéole will help you to determine your goals and expectations, and manage all aspects of your urban beekeeping project.

## What are the five main benefits of installing beehives on a property?

- ① Tenant engagement around an exciting, teamwork-oriented project
- ② Improving tenant retention and the perceived value of the building
- ③ Acquisition of points for sustainable development programs
- ④ Honey and bee product creation for marketing purposes
- ⑤ Implementation of an innovative project at the forefront of the industry

# Urban Beekeeping, Rooted in Agriculture

Before we explore the multiple benefits of urban beekeeping, it is important to put this movement in context. The phenomenon of urban hives is intrinsically related to the resurgence of interest in local food production.

Demand for local production is driven by a number of factors, including the average distance over which food is typically transported in order to reach its consumers: roughly 1,200 km. With so much distance to travel, there is an average 30% spoilage rate from the farm to the plate. Local food production allows for a significant reduction in greenhouse gas emissions and for the support of local farmers, besides being fresher and more nutritious.<sup>1</sup>

## WHAT IS URBAN AGRICULTURE?

Urban agriculture is a growth sector within the food production industry: market gardening (vegetables), horticulture (flowers), silviculture (fruits), aviculture (eggs), and, of course, apiculture, more commonly known as beekeeping (honey).

Besides nourishing those who live in cities, this type of agricultural production brings numerous other advantages such as food security, environmental awareness, civic participation, reduction of urban heat islands, and job creation.<sup>2</sup>

## Small Project, Huge Impact

Historically, urban agriculture was practiced on a small scale. One of the largest Canadian cities, Montreal, was a pioneer through its community gardens program, established in 1975.<sup>3</sup>

Today, it has become a thriving industry that can take various forms: from small community projects and producers that profit from getting people involved to hydroponic crops grown on urban rooftops and other underutilized spaces. These exciting initiatives continue to grow. Gotham Greens (New York and Chicago), Square Roots (New York) and Lufa Farms (Montreal) are three inspiring examples of businesses that have encouraged a new way of thinking about the role of agriculture in the city.

These initiatives have reinvented conventional methods of cultivation by growing in different locations (on unused spaces) and using sustainable practices (composting, biological pest control, rainwater recuperation and recirculation, surplus food distribution, etc.).

## The Table is Set for a Rapid Increase in Urban Agriculture

Today, cities recognize the important role of urban agriculture, notably as a factor in urban planning strategies as well as in municipal politics.<sup>4</sup>



Photo credit: Lufa Farms

Once again, as owners, promoters, suppliers, managers and building professionals, we have an interest in encouraging initiatives related to urban agriculture; so why not become innovators?

### **URBAN BEEKEEPING TAKES OFF**

As a proponent of the resurgence of interest in urban agriculture—in local food production in particular—urban beekeeping really took flight at the beginning of the 21<sup>st</sup> century.

#### **Paris The Pioneer**

Certain pioneering initiatives permitted the emergence of the urban agriculture movement. This is certainly the case with the hive at the Opéra de Paris, installed in 1982. However, this is not the oldest urban beekeeping project in the city: a beekeeping school has existed in the Luxembourg Gardens since 1856.<sup>5</sup>

#### **Honey in Chefs' Eyes (and Plates)**

In Canada, Chef Jean Soulard installed his own apiary of four colonies, on the roof of the Chateau Frontenac in Quebec City in the spring of 2009.<sup>6</sup> The honey produced on his roof has been used in his kitchen and offered as gifts to the hotel's clients ever since.

In April 2012, the iconic Waldorf Astoria of New York revived its old market garden on the roof of the celebrated Park Avenue monument, including six hives generating honey each year for the hotel kitchens.<sup>7</sup>

Today, urban beekeeping is practiced in many world-class cities—Paris, New York and Quebec of course, but also Montreal, Toronto, Vancouver, Ottawa, London, Hong Kong, Tokyo, Melbourne and Sydney, to name only a few.

### A Movement Fed by Concern...

This rise in urban beekeeping has also been supported by a general concern for the fate of pollinators, who are responsible for the pollination of a third of everything that we find on our plates (such as fruits, vegetables and nuts).

### THE DECLINE OF BEE POPULATIONS

It's become common knowledge that populations of bees, butterflies, bumble bees and other pollinators are declining around the world. This accelerating loss is attributable to three main factors:<sup>8</sup>

1. Industrial agriculture (monocultures, massive use of pesticides and habitat loss)
2. Disease and parasites
3. Climate change

This shrinking of pollinator populations is extremely worrisome, particularly with regard to agriculture. In fact, bees are responsible for the pollination of more than 130 varieties of fruits and vegetables.<sup>9</sup>

Almonds, cranberries, apples, blueberries, broccoli, cauliflower, celery, asparagus, avocados, pulses: these are a few examples of crops that entirely depend on pollinating insects to be productive.<sup>10</sup>

### A Professional Pollinator

Honey bees are excellent pollinators, thanks to their large numbers: each hive contains up to 50,000 individuals. They are also available on demand: in fact, many crop producers depend on beekeepers to travel to their location with hundreds of hives in tow. Due to the heavy use of pesticides and reduced natural habitat for wild pollinators on conventional farms, honey bees are often the only pollinators around who can perform this vital role.

**“Pollinator populations are declining around the world.”**

### Economic Impact

In Canada, it's estimated that honey bee pollination services contribute a harvest value of \$4 to \$5.5 billion.<sup>12</sup> To offset the loss of colonies, beekeepers intensify the production of small hives from the colonies that survive winter, which helps to fulfill the need for pollination and to consolidate their stock. However, this strategy is less favourable for the production of honey and maintenance of strong colonies.<sup>13</sup> The industry is caught in a vicious circle. Incidentally, the decline in pollinators coincides with a growth in demand for agriculture, resulting in a rise in food prices.



Photo credit: Matthew Henry (Burst)

### WINTER MORTALITY

The winter mortality of bee colonies should normally be below 15%, but that number has been much higher since 2003. In Ontario, for example, colony mortality reached 45% during the winter of 2017-2018.<sup>11</sup>

## Solutions

To reverse this tendency and correct this crucial problem, conventional agricultural practices need to be radically changed to support ecological agriculture. These are a few key measures:

- crop rotation,
- habitat creation and preservation,
- organic food production,
- preservation of uncontaminated water sources.

## CITIES: A POLLINATOR'S PARADISE

Many people are surprised to learn that bee colonies flourish in urban environments. When we think about it, it makes perfect sense, since bees require an environment fulfilling the four following criteria:

## Healthy Environment (no pesticides)

For ecological and sanitary reasons, the use of pesticides in urban areas is often far less than what we find in agricultural zones; their use is even banned in some regions. Thus, cities can be a safer and healthier environment for bees than certain agricultural ecosystems where the use of pesticides is endemic.<sup>14</sup>

**“Conventional agricultural practices need to be changed.”**

## Abundance of Edible Resources (flowers, trees, shrubs)

In the city, we find an abundance of floral diversity, offering nectar production all season long (gardens, flower beds, municipal landscaping, parks, uncultivated areas, etc.).



It's also possible (and preferable!) to increase the resource potential of urban areas by cultivating or encouraging the growth of certain types of plants that bees like, such as:

- flowers (rugosa, bee balm, melilot, borage, lavender, rosemary, thyme),
- trees (willow, apple, cherry, linden, maple, locust, hazelnut),
- shrubs (raspberry, blackcurrant, gooseberry, mulberry).<sup>15</sup>

[Find melliferous plants adapted to your climate on the Xerces Society website!](#)

In exchange, urban pollinators contribute to the productivity of parks and gardens, plant reproduction and abundant harvests.<sup>16</sup>

**“Bees don't have to work as hard to keep warm during the winter in the city.”**

### Sources of Water

Depending on the outside temperature, a hive can need more than 25 litres of water each year.<sup>17</sup> When we think about it, water sources are abundant in urban areas (canals, puddles, moist earth, etc.).

### Mild Climate

The average temperature in the heart of the city is higher than in the countryside, particularly due to significant amounts of hard surfaces. It's what's called an "urban heat island", causing a temperature increase of 1 to 3°C.<sup>18</sup> While this rise in average temperature is not particularly comfortable for humans, bees don't have to work as hard to keep warm during the winter.



### URBAN BEEKEEPING: A FIRST STEP IN A GREEN ECOLOGICAL APPROACH

A good urban beekeeping project includes a floral landscape in order to:

- **green and revitalize the urban environment;**
- **offset urban heat island effects;**
- **offer more floral resources for all pollinators.**

# Five Benefits of Urban Beekeeping

Everyone, including building owners and managers, can greatly benefit from contact with bees. Here are the five main benefits to be gained from installing a hive on your property.

## ① COMMUNITY SPIRIT AND TEAMWORK

**Mobilize your tenants with an exciting, teamwork-oriented project**

A spirit of cooperation reigns within a honey bee hive, and installing a hive on-site gives tenants the opportunity to develop tighter bonds and a sense of community. Each hive visit is an occasion for people to have an immersive experience which is at once innovative and collaborative, depending on their desired level of involvement.

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**A good beekeeping partner will offer various packages, including interactive workshops, communication tools and other hive-related activities for tenants to be involved with directly or indirectly.**



## ② REPURPOSE UNUSED SPACES

**Acquire points for sustainable development programming**

Unoptimized spaces around urban areas, like rooftops, for instance, are a leading contributor to the urban heat island effect. The installation of a hive gives an ecological advantage to lost space which otherwise adds no value to your building.

In addition, installing a hive in the context of a larger greening project can lead to the acquisition of BOMA BEST points (see section 09.01.03 of the BOMA BEST

guide on the protection or restoration of natural habitats) or another ecological accreditation. This has the added benefit of providing food and habitat for many species, not just bees!

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“Landscaping – even in urban areas – can help to protect or restore important habitat for local wildlife species. Buildings have an opportunity to provide connectivity between larger natural landscapes or contribute to habitat patches that can aid in habitat migrations and provide important refuges for wildlife.”<sup>19</sup>

3

### CONNECTING WITH NATURE

**Improve tenant retention and boost the perceived value of your building**

Growing numbers of citizens are advocating for preservation of green spaces and support of local food production initiatives. Urban beekeeping encourages connection with nature—including the seasons, the weather and blossoming rhythms—which favours the understanding of a more global link: uniting people with the flora and fauna that surrounds them.

4

### LOCAL FOOD PRODUCTION

**Create honey and beeswax products as marketing tools for self-promotion**

All projects in urban agriculture promote food production. However, projects in urban beekeeping distinguish themselves with their productivity and the creation of a range of other bee products: customized jars of honey, sampling boxes, lip balms, beeswax candles and soaps, to name a few.



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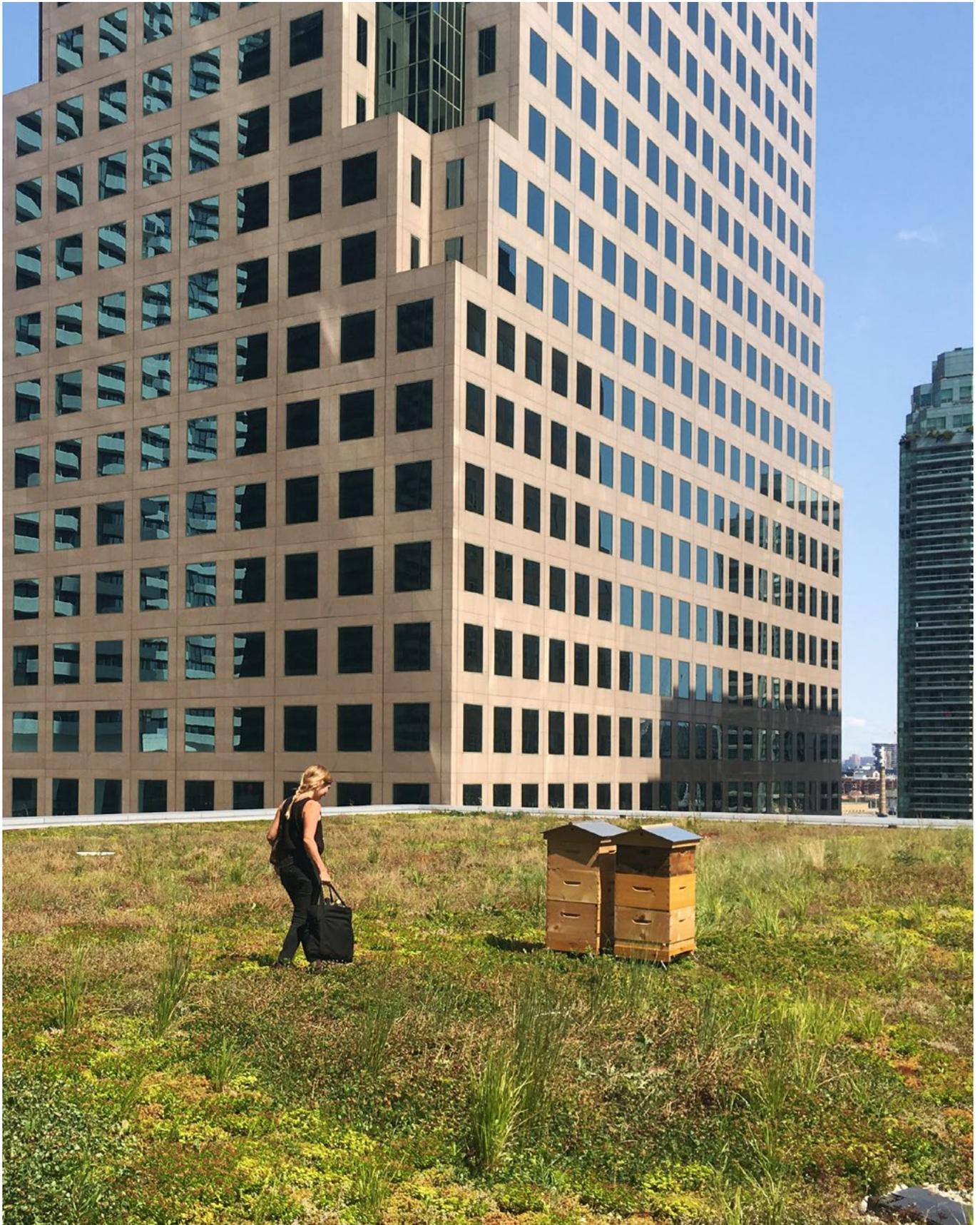
A good beekeeping partner will offer a range of products from the hive to use as marketing collateral. As a matter of fact, the honey produced on each rooftop is unique and carries its own distinct signature from the surrounding ecosystem, celebrating local characteristics and unique floral variations. At the end of the season, you may sell or offer unique products with your building’s brand.

5

### EDUCATION AND ENVIRONMENTAL AWARENESS

**Implement an innovative project as a trailblazer in your industry**

A beehive is an unparalleled educational tool for promoting the greening of our urban environment. Historically, these projects are implemented by innovative avant-garde companies hoping to shed light on important issues related to the environment and agriculture (such as the use of pesticides and their impact on the food chain, monocultures, food systems and the decline of pollinators).



An inspiring urban beekeeping project at RBC WaterPark Place, in Toronto, in collaboration with Alvéole.

# Six Inspiring Projects

Speaking of avant-garde initiatives, here are six remarkable projects, all implemented with help from Alvéole, which have had a significantly positive impact on tenants and building personnel in addition to bolstering the company's brand.

## **HILLCREST MALL, RICHMOND HILL, ONTARIO**

Two hives were installed on the roof of the shopping centre in June 2017. The project attracted media attention right away (a dozen articles were published, including in the *Toronto Star*). The shopping centre's personnel, consisting of about forty employees, was in the front row at the opening and able to become familiar with the bees through a series of workshops.

At the end of the season, the colony produced magnificent amber honey from the flowers in the area. Hillcrest put their unique honey for sale at a kiosk in the mall, thus spreading the project to its clientele and the community.

*"This is our way of taking environmental concerns one step further. The story, in the beginning, was about the lack of bees and how we as a society are losing them, but now it's about keeping them healthy. It's exciting."*

- Lisa Resnic, Marketing Director, Hillcrest Mall<sup>20</sup>

## **MANULIFE, TORONTO, ONTARIO**

In 2017, Manulife asked Alvéole to install two hives in their garden, before adding a third in the summer of 2018. The hives are entirely visible to the building personnel as well as visitors. Though they were installed directly on busy Bloor Street in Toronto, the bees don't lack resources thanks to the luxuriant flora along Rosedale Valley Road and the Don Valley Parkway.

*"We've got such a beautiful space here, and it seemed like a great opportunity to really bring sustainability and biodiversity to people."*

- Mary Desjardins, Assistant Vice-President of Philanthropy and Sponsorship, Manulife<sup>21</sup>

## **PROMENADES SAINT-BRUNO, SAINT-BRUNO, QUEBEC**

This project was conceived in 2018 in collaboration with Fairview to integrate perfectly into the heart of their immense shopping centre. During its renovation, the roof of the Promenades was covered with a layer of rock, offering a large, practical and accessible area for the hives.

Jeff Simmonds, project manager, saw the hives as an opportunity to reclaim and optimize this unused space. The honey produced by their hives was distributed to the building personnel, generating a sense of pride within the team.

*“My forward-thinking, environmentally conscious employer helped to set me on a path to being an amateur urban apiarist (or as I’m often referred to in the office, the resident bee expert) by installing hives at our workplace. Since then, I attended every hive opening and brought along colleagues to share my passion for the project.”*

**- Jeff Simmonds, Manager of Customer Experience, Cadillac Fairview**

### **OPTEL, QUEBEC, QUEBEC**

Two hives were installed on the roof of Optel’s building in June 2017. The hives were an immediate hit with the personnel, who were present for the hive inspections as well as a series of educational workshops. Some employees even brought along clients, colleagues and family members for hive inspections.

At the end of the season, the colony produced magnificent amber honey from the flowers in the area. Optel distributed its unique local honey to clients and personnel.

*“Our collaboration with Alvéole allows us to support biodiversity, but most importantly to educate our employees about the importance of pollination by allowing them to participate in workshops at our hives multiple times per month. There are more than 70,000 bees that live in harmony with us. It is a privilege for us to be able to support urban beekeeping and to enjoy such delicious honey!”*

**- Mégane Mandruzzato, Sustainability Leader, Optel**

### **RBC WATERPARK PLACE, TORONTO, ONTARIO**

Oxford Properties installed two hives on the roof of RBC Waterpark Place in 2017. An observant eye could see that in addition to the bees, butterflies, and bumble bees, grasshoppers and birds are now also flourishing in this green oasis in the heart of the city.

The project manager requested several workshops while opening the hive so that personnel could participate in hive maintenance as well as a honey extraction workshop where everyone could leave with a small jar of rich, amber honey.

*“WaterPark Place customers enjoy attending Alvéole’s on-site workshops. They provide a unique and engaging experience.”*

**- Denise Sadoch, Property Manager, Oxford Properties Group**

## **“WaterPark Place customers enjoy attending Alvéole’s on-site workshops.”**

### **WORLD EXCHANGE PLAZA, OTTAWA, ONTARIO**

This Triple A 670,000-square-foot office building, situated in the financial district of Ottawa, acquired hives for four colonies in June 2018. In collaboration with their beekeeping partner Alvéole, QuadReal decided to position the hives so they would always be visible to the people working in the building.

Before the installation of the hives, QuadReal was sure to communicate the nature and objectives of the project to those working there, via an informative kiosk put in place for Earth Day.

*“Some of our hardest-working tenants are the honey bees that have moved onto the World Exchange Plaza rooftop. Our office tenants have welcomed the bees, are fascinated by them and by the connections to the ecosystem that the bees bring. Our property team’s favourite summertime task is making sure the rent from the bees is as tasty as last year!”*

**- Jamie Gray-Donald, Senior Vice-President, Sustainability & EHS, QuadReal Property Group**



# The Bee

Typically, a beekeeping project is embraced by its participants through education, awareness and communication.

Before jumping into a project of this nature, one has to understand bees and their different varieties so as to better understand their behaviour and internal organization.

## THE BIG BEE FAMILY

It's simple, easy and natural to share the city with these pollinators. After all, honey bees are only one of the numerous species of pollinators with whom we share the urban area.

The big bee family includes more than 20,000 species, and at least 1,000 can be found in Canada.<sup>22</sup> In the heart of this family, we find the honey bee (*Apis mellifera*) among a multitude of others.

## THE HONEY BEE: A CANADIAN IMMIGRANT!

The bee used in beekeeping is not indigenous to Canada. However, our area does include hundreds of species that have evolved here in our ecosystems, along with our indigenous flora: solitary, wild and social bees, such as the Megachile, Osmia, Halictus and Andrena, as well as certain species of bumble bees.<sup>23</sup>

## WILD BEES: THE INVISIBLE ONES

These bees cannot be domesticated as they can only exist in the wild, and many of them live solitary lives rather than in large colonies. However, these insects are of capital importance in the maintenance of our biodiversity and the pollination of our crops. They face the same threats as honey bees and are likely facing similar levels of decline, though we have little data on their numbers.

Therefore, honey bees are excellent ambassadors for the thousands of other bee species, raising awareness about their importance and impact on our ecosystems while shedding light on the dangers faced today by all pollinators.

In fact, the decline of the honey bee showcases the endangerment of all species of domesticated and indigenous bees.<sup>24</sup>

## APIS MELLIFERA, AN UNPARALLELED CITY DWELLER

There are many varieties of honey bees (*Apis mellifera*). Some are selected for their honey-producing capacity (particularly in commercial honey production), while others are chosen for their docility (ideal for urban beekeeping).

## THE ITALIAN BEE

This is the case of the Italian Bee. It has a very mild temperament and because of this, is the perfect neighbour in a densely populated urban area. It is also why urban beekeepers wear little or no protection. A good urban beekeeping partner cultivates its own line of bees with whom it is easy to work and interact.

## THE THREE HIVE MEMBERS

In the hive, we find three individuals:

- the queen,
- the drones (males),
- the workers (females).

### Queen

There is only one queen per hive, and Her Majesty can live up to five years in the best conditions. She requires a court of bees to help feed, hydrate and clean her as she is too busy laying up to 2,000 eggs per day.

### Drones

The male bees in the hive do not have stingers – instead, they have a reproductive system. They do not forage for resources, as their primary role is to mate with a virgin queen from another hive.

### Workers

The workers make up the majority of the hive, about 90% of the colony. This can include up to 50,000 bees at the height of the season. Workers can be found everywhere inside the hive. They occupy many different roles during their short lives, which only last for 30 to 45 days.

Like each member of your staff or tenant of your building, workers concentrate on one specialty at a time, but wear many different hats throughout their life!

Cleaner, nurse, queen's aide, waxer, ventilator, guard, forager... The adoption of roles within the colony is fluid – workers adjust according to the immediate needs of the colony.



A queen bee surrounded by workers.

## FASCINATING FACTS!

- **As she emerges, the first task of the young bee is to nibble the film of wax (called operculum) that covers its cell.**
- **The nurse feeds the eggs and larvae that grow in the honeycomb with a mix of honey, nectar and royal jelly. She can visit a single larva up to 1,300 times in a day!**
- **The wax bee produces wax lozenges with its wax glands, which are situated on the underside of its abdomen. By kneading the tiny pads with her mandibles, she manages to build honeycombs.**
- **The forager constantly comes and goes between flowers and the colony, returning with nectar, pollen and propolis. It's a difficult job that ultimately brings her to the end of her life.**

## A BEE'S FLIGHT RADIUS

Did you know that bees can cover an area measuring a radius of up to 5 kilometres in their search for floral resources? As they are active within this total area, the presence of an apiary is not more problematic a metre away than a kilometre.



Here is an example of the distance that can be covered by bees in the heart of a city like Vancouver.

# Safety First



Bees are docile insects with whom it is easy to coexist, whether at home, at work, or at school, on the condition that it is with a partner who understands their needs and their behaviour as well as the way to install a hive safely.

## LET'S TALK ABOUT STINGS

Rest assured that the honey bee is not interested in the presence of humans. Her daily quest is to bring nectar, pollen, resin or water to the colony to ensure its development.

Unless aggression is demonstrated towards her, the bee has no motivation to sting. Once she stings, she loses her stinger and a part of her abdomen and rapidly dies.

**“The bee has no motivation to sting.”**

## THE DIFFERENCE BETWEEN BEES AND WASPS

Often, bees are mistaken for wasps and vice versa. This is normal: unless one is passionate about pollinators, it can be difficult to see the difference between these two insects.<sup>25</sup> Here are a few tips to distinguish them:

The Difference  
Between Bees  
and Wasps



**Honey bee**

**Wasp**

	Honey bee	Wasp
<b>Size</b>	Small	Medium
<b>Appearance</b>	Short and hairy	Long and smooth
<b>Colour</b>	Black and gold	Bright yellow and black
<b>Occupation</b>	Foraging	Predation
<b>Diet</b>	Vegetarian (nectar and pollen)	Omnivore (nectar, pollen, insect or animal protein for their young)
<b>Behaviour</b>	Docile and focused	Entrepreneurial
<b>Stinger</b>	Barbed (can only sting once)	Smooth needle (can sting repeatedly)
<b>Habitat</b>	Hive	Paper nest (in trees) or burrow (underground)
<b>Function in the ecosystem</b>	Pollination	Insect control

## URBAN BEEKEEPING, A PRACTICE FOCUSED ON EDUCATION

Now that the difference between bees and wasps is a little clearer, one must also know that urban beekeeping focuses on an approach that is more or less opposite to that of commercial beekeeping.

Before being revived by city folk, beekeeping was an agricultural practice based on honey production, stemming from economic necessity. In fact, commercial beekeepers manage hundreds—if not thousands—of hives, and need to do so efficiently in order for their hives to be profitable.

Today, urban beekeeping answers more and more to objectives that largely exceed economic necessity.

In addition, urban beekeeping is attractive to a number of potential stakeholders:

- businesses,
- schools,
- NGOs,
- rehabilitation centres,
- condo owners,
- shopping centres,
- municipalities,
- institutions,
- retirement homes,
- and many more.

Characteristics	Urban Beekeeping	Conventional Beekeeping
Location	City and suburbs	Country
Scale	Small-scale	Large-scale
Type of Hive	Small, modest and quiet	Large, strong and productive
Practice	Based on education	Based on production
Average Time Spent at Hive	40 minutes	7 minutes
Potential Impact	Community education and awareness, community spirit, teamwork, tenant engagement, connection with nature	Food production, pollination

# Hive Installation

Ready to install your hives? One must understand that the beekeeping profession comes with additional responsibilities when practiced in the city.<sup>26</sup> Here are the steps to follow if you'd like to install a hive in one of your buildings.

①

## **DETERMINE YOUR GOALS AND EXPECTATIONS**

What benefits do you hope to gain from your hive? Whether it be the revitalization of an unused space, the creation of an experience or an increase in a sense of community for your tenants, understand that the first objective of urban beekeeping is awareness and education. Honey production is a collateral benefit that will help to showcase your project.

②

## **CHOOSE A SUPPLIER**

Any building can host a hive, but you can only take full advantage of the experience with the help of a qualified, experienced partner. A partner should be able to provide:

### **TURNKEY SERVICE**

Installation, maintenance, customer service, showcasing of the initiative within the building, external promotion

and creation of honey and wax products, customized branding... few beekeeping companies can ensure all of these services. Opt for an experienced partner offering a range of services to maximise your impact and your investment.

“You will need a partner with an experienced and passionate team.”

### **EXPERIENCED TEAM**

The principal role of the beekeeper in the city is to ensure the well-being of urban colonies, which is very different from rural beekeeping. The inspections and manipulations can multiply rapidly throughout a beekeeping season. You will need a partner with an experienced and passionate team who communicates well.

### **LOCAL ESTABLISHMENT**

Whether it be for a workshop, a hive visit, managing a swarm, a problem or an emergency, you should be able to count on a partner who is located no more than 30 minutes from your property.



### REQUIRED INSURANCE AND CERTIFICATION

A hive implies regular maintenance and potential contact with the public. Be assured that your beekeeping partner has full commercial liability insurance. This partner should also hold any required provincial agricultural certifications.

### ADAPTED FACILITIES

Beekeeping involves very specialized equipment and facilities (adapted trucks, certified honey house, extraction and honey jarring equipment, beekeeping materials, protective clothing, hives and colonies, tools, storage, etc.) Choose a partner who is properly equipped and certified.

### KNOWLEDGE OF PROVINCIAL REGULATIONS

Depending on the province, regulations concerning the presence and maintenance of a hive can vary greatly.

Discuss the regulations in place with your partner before starting.

③

### OBTAIN A QUOTE

Once you have found the ideal partner, request a building evaluation. A good partner will ask for photos to evaluate the area—or better yet—come and evaluate your needs in person. This way, you will get an exact quote that is suited to your building and the project you hope to undertake.

④

### FIND THE BEST LOCATION

Every commercial building in the country can house a hive, given a few minor adjustments to a given space.

A good urban beekeeping project—when well executed and well maintained—will have no adverse impact on the chosen space.

For your information, here are a few elements to keep in mind when choosing the best location in your building, whether it be on the roof, a balcony, a common space or even an internal courtyard. Remember that a good partner will support you over the course of this process.

### ORIENTATION

The hive must be placed so that the bees' flight trajectory does not cross an area where people circulate. Bees take flight over a distance of 10 feet. By then, they are at a height greater than humans and fly above most buildings.

### TRAFFIC

A hive should be placed in a calm environment, where there is little human activity. All hives should be installed a certain distance from a parapet (at least 6 feet), a wall (at least 4 feet) and any machinery with constant noise (at least 20 feet from a water tower and air conditioning unit).

### VISIBILITY

Do you want the hive to be visible from the inside, so people can observe it at any time? Or do you prefer it to be installed in an interior courtyard where your staff can enjoy it? The best place for a hive is where it is visible to your tenants, increasing its internal and external impact and maximizing your investment.

### EASE OF ACCESS

Is the site easily accessed by a staircase or elevator, or is it only accessible by a hatch? Ideally, you should look for a site that is accessible through a door or—even better—the ground! If your site is only accessible by a hatch, it might add additional costs related to the level of complexity of the installation and its maintenance.

### EXPOSURE

The hive should be installed in a sunny, dry location, protected from the elements and strong winds.



## 5

### PREPARE THE SITE

Once you have evaluated all of your potential location's features, be sure to prepare the site. The process varies between types of location.

#### ROOFTOP

- **Membrane protection:** Your partner should supply small pieces of rubber to avoid damage to the membrane covering the roof.
- **Water access:** A good partner will place a water source near the hive so the worker bees don't have to go far to drink, especially during summer heat waves or drought.

#### GROUND OR INTERIOR COURTYARD

- **Protective screens:** Consider the installation of screens (fence or bushes) that are high enough to direct the bees' flight trajectory to 10 feet and give the hives some privacy.
- **Space:** Leave enough space around the colonies to facilitate maintenance work and the honey harvest.

Regardless of the hive's location, it is vital to warn people to avoid it by clearly marking its presence.

6

### TAKE ACTION

Be sure you get confirmation for the chosen location from your supplier and proof of their insurance certificate. Prepare any questions about logistics for your partner ahead of time (private entrance, necessary building or roof access, parking, resource person, etc.).

7

### MOBILIZE YOUR TENANTS

Before the hive's installation, mobilize your tenants around your innovative project. Newsletters, educational posters, workshops: your partner should offer a range of possibilities for sharing information about your project. It's up to you to decide which tools to use!

8

### PUSH IT FURTHER!

The installation of a hive is but the first step in a greener, more ecological approach. For example, you can green your rooftop with flowerpots, revisit your landscaping to make it more pollinator-friendly, welcome a market garden or install a hotel for pollinators. A good beekeeping partner will manage all aspects of the project.

“You can green your rooftop with flowerpots or install a hotel for pollinators .”



# A Typical Beekeeping Season

**Agricultural seasons follow one another, but they are never identical. In spite of this, certain regular steps are inevitable once you install a hive.**

Rest assured: a good beekeeping partner will offer a turnkey service and take charge of everything to ensure the well-being and sanitary control of the hive.

## **WINTER (JANUARY TO MARCH)**

Given that the beekeeping season has not yet begun, it's the ideal time to prepare for the coming season and mobilize people around the hive project. A few great

ways are through educational posters and workshops introducing beekeeping. Generally, you should begin the project around the holiday season, so that your beekeeping partner can plan the purchase of queens and equipment, hiring, the preparation of the hive's location and the design of your custom labels.

## **SPRING AND SUMMER (APRIL TO AUGUST) HIVE INSTALLATION AND MAINTENANCE**

Your supplier can proceed with the hive's installation and its regular maintenance come spring. A professional supplier will give the date of visits ahead of time so



## **WHERE DO YOUR BEES COME FROM?**

When winter is over, strong hives must be divided into several smaller hives – a bit like perennial plants! The objective: to balance the strength of the hives and the size of their populations. This is an essential step in preventing swarming, a phenomenon that must absolutely be avoided in an urban area.

you can get ready. Certain suppliers, like Alvéole, will give you access to an online site where you'll be able to manage your schedule, view upcoming visits and consult a detailed report following each inspection.

### SWARM PREVENTION

Swarming is a natural yet avoidable phenomenon in which the colony spontaneously divides into two smaller colonies. First, the bees create a new queen. Then, the "old" queen leaves the colony with half the hive's population to find a new home elsewhere. In the city, this could mean a car, a window or a lamppost!

It's the role of the beekeeper to prevent the swarming of the colony. This phenomenon must be avoided at all costs – especially in urban areas.

Swarms in the city could cause citizens to worry, distrust or even fear bees and urban beekeeping. It's why you need to count on a turnkey service from a diligent, professional company.

**“It's the role of the  
beekeeper to prevent the  
swarming of the colony.”**



### REGULAR INSPECTIONS

A beekeeper saying goes like this: as flowers bloom, colonies boom! The population of a hive grows exponentially in the summer. Beekeepers need to schedule a series of regular visits to control the size of the hive, to be sure the bees have enough space to store their honey and to check that the colony doesn't intend to swarm.

### CUSTOM LABEL PREPARATION

Soon after the hive's installation, your partner should begin the design phase of your custom labels for your honey production and products derived from the hive. Your supplier should manage the production (design, printing, label application), ensuring your approval at each key step in the process.

### EDUCATIONAL WORKSHOPS

Educational workshops – whether theoretical or practical – help to foster a relationship between the hive project and your team. Alvéole offers four workshops:

- Discover the World of Bees
- Meet Your Bees
- From Hive to Honey Jar
- Powerful Pollinators

### HONEY HARVEST

At the end of the summer, the time will come to harvest the extra honey produced by the bees. The quantity produced will vary greatly depending on the environment around the hive. Your partner will come to gather the frames filled with honey.

### FALL (SEPTEMBER TO DECEMBER) HONEY EXTRACTION

Once your honey is harvested, your partner will take the honeycombs to a certified honey house for jarring. The process is simple: the frames are put in a centrifuge that extracts the honey from the combs by spinning them quickly. The honey is then filtered and jarred as is – without pasteurization – to preserve its nutritional value and nuanced flavour.

### RECEPTION AND DISTRIBUTION OF THE HONEY

A month after the extraction, you'll receive your entire harvest, jarred and labelled with your custom branding. At this time, you can organize a workshop with your supplier or even a small sales kiosk. It is also possible to give the honey as a gift to your clients and personnel. A good supplier will be familiar with the provincial regulations in effect so that you can share your harvest legally.

### CREATION OF BEE PRODUCTS

At the very end of the season, your partner can prepare a range of additional products made from urban beeswax (lip balms, soaps and candles, for example) to spread awareness of the project even further.

### PREPARATION FOR WINTER

As fall approaches, your bees are already getting ready for winter. The number of hive inspections lessens. Your partner should treat for common parasites and make sure the bees have ample food to carry them through the winter.

### WRAPPING THE HIVES

Finally, as the first frost appears, the hive must be wrapped with insulation (yes, the bees stay on-site all winter!). As needed, the hive can also be relocated for better ventilation and to protect it from the weather.



### DURING THE WINTER

Like all agricultural or seasonal activities, beekeeping takes a holiday in the winter. The bees will spend the winter in the warmth of their hive where they will maintain an internal temperature of up to 35°C. All that's left for you to do is enjoy your honey and products harvested from the hive, enjoy a few additional workshops, and wait for spring!

#### SPRING

Hive Installation & Maintenance

Educational Workshops

#### SUMMER

Swarm Prevention

Regular Inspections

#### FALL

Honey Extraction

Honey Harvest

#### WINTER

Preparation for Winter

Wrapping the Hives

# Alvéole, Canada's Leading Urban Beekeepers

Alvéole is a social enterprise offering a turnkey service for the installation and maintenance of bee colonies in urban and suburban areas across Canada.

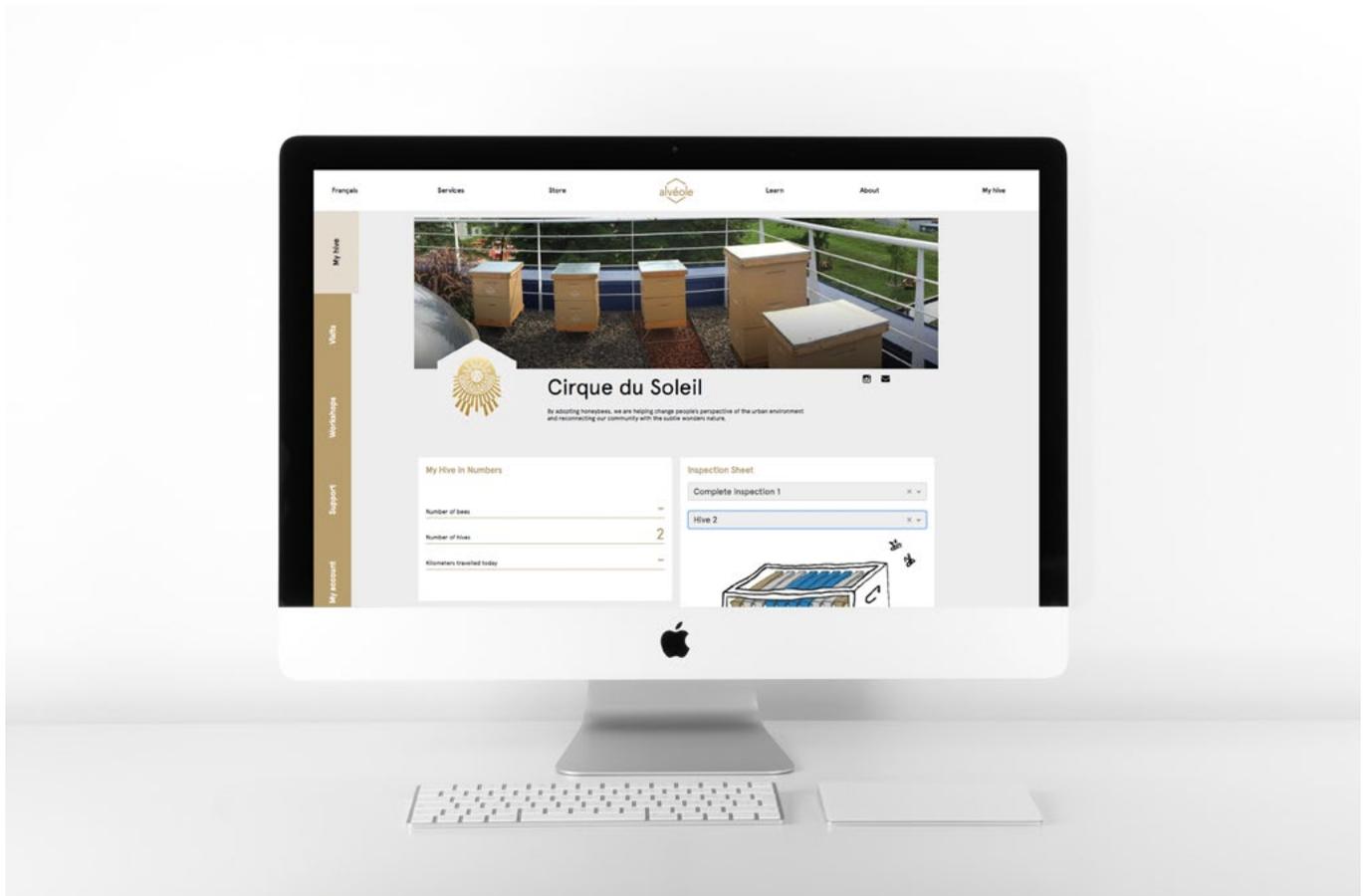
The company manages projects for thousands of businesses, schools and municipalities, each hive offering people an opportunity to connect with nature in the city and to change their perspective of the urban environment. All told, Alvéole estimates having reached at least 25,000 people of all ages and backgrounds through its beekeeping services and educational workshops.

“Alvéole estimates having reached at least 25,000 people through its beekeeping services and educational workshops.”

**AN ACTIVE SOCIAL ENTERPRISE SINCE 2013**  
Founded in 2013, Alvéole is the product of three entrepreneurial childhood friends and beekeepers



who saw the educational potential of bees. After gaining valuable experience working in the commercial beekeeping industry in Manitoba, Alex, Declan and Etienne decided to bring beekeeping to urban centres to connect people to nature.



Today, their growing team is bursting with ideas for bringing bees and people together; honey being but a means to a better understanding of issues related to the environment and urban greening.

“Alvéole also uses technological innovation for better interaction between hives and humans with a social platform called *My Hive*.”

#### GROWTH AND EXPANSION

Originating in Montreal, the business has since expanded to Canada’s largest metropolitan areas.

It is made up of a passionate team of professional beekeepers, as well as a permanent admin team at the head office (customer service, administration, accounting, account management, technological support, communications, marketing, sales and bee product production).

#### B CORP CERTIFICATION

In 2018, the company received its B Corp Certification, a certification shared by other responsible organizations such as Patagonia, MEC and the Business Development Bank of Canada (BDC). Besides being profitable, these companies work to generate positive economic, social and ecological impacts.

#### TECHNOLOGY AND INNOVATION

The company also uses technological innovation for better interaction between hives and humans with a social platform called *My Hive*, where clients can exchange and share their data with the community.

Visit schedules, workshops, photos, videos, real-time reports, hive history: all of the information is posted on a public page which can be shared on social media or on internal or external websites.

### A FEW OF ALVÉOLE'S PARTNERS

We encourage you to communicate directly with Alvéole to begin a turnkey project, tailor-made for your building. Here are a few partners who have put their trust in Alvéole.



# Last Word...

A beekeeping project is affordable and easy to execute, especially with a confident, experienced partner like Alvéole.

The benefits are numerous and go hand-in-hand with the potential long-term impacts. Hundreds of Canadian companies are enjoying the benefits of having hives on their premises, proving that such projects pose no problem concerning safety or civil responsibility.

As building owners and managers, we can play an active role in the implementation of innovative initiatives while having a direct impact on quality of life in our cities.

By bringing a little nature into the city, we can lessen the divide between country and city living—and this reconciliation will be to all of our benefit.

Contact us or Alvéole for more information.

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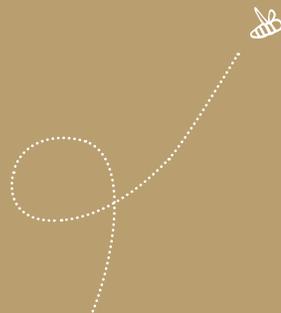
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# References

1. David Suzuki Foundation. *Food and Climate Change*, <https://davidsuzuki.org/queen-of-green/food-climate-change/> [December 1, 2018].
2. MAPAQ, 2012. *L'agriculture périurbaine et urbaine au Québec*, <https://www.mapaq.gouv.qc.ca/fr/Publications/Agricultureurbaineetperiurbaine.pdf> [December 1, 2018]
3. Ville de Montréal. *L'agriculture urbaine chez les Montréalais*, [http://ville.montreal.qc.ca/portal/page?\\_pageid=7017,111991580&\\_dad=portal&\\_schema=PORTAL](http://ville.montreal.qc.ca/portal/page?_pageid=7017,111991580&_dad=portal&_schema=PORTAL) [December 1, 2018].
4. *Ibid.*
5. Sciences et avenir, 2017. *À Paris, l'apiculture urbaine a le vent en poupe*, [https://www.sciencesetavenir.fr/animaux/a-paris-l-apiculture-urbaine-a-le-vent-en-poupe\\_115138](https://www.sciencesetavenir.fr/animaux/a-paris-l-apiculture-urbaine-a-le-vent-en-poupe_115138) [December 1, 2018].
6. Le Soleil, 2010. *Des abeilles au Château Frontenac*, <https://www.lesoleil.com/affaires/des-abeilles-au-chateau-frontenac-4a829d6e0c76013a87b67dc967414aa1> [December 1, 2018].
7. Tree Hugger, 2012. *New York's Waldorf Astoria Hotel, Home to 360,000 Bees*, <https://www.treehugger.com/travel/seriously-local-honey-beehives-waldorf-astoria-hotel-new-york-city.html> [December 1, 2018].
8. Greenpeace, 2013. *Le déclin des abeilles*, [https://cdn.greenpeace.fr/site/uploads/2017/03/le-declin-des-abeilles.pdf?\\_ga=2.214449695.963634648.1542224794-1882352781.1542224794](https://cdn.greenpeace.fr/site/uploads/2017/03/le-declin-des-abeilles.pdf?_ga=2.214449695.963634648.1542224794-1882352781.1542224794) [December 1, 2018].
9. WILSON-RICH, Noah. *The Bee: A Natural History*, Princeton, New Jersey: Princeton University Press, p. 27.
10. *Ibid*, p. 96.
11. OMAFRA, 2018. *Ontario Apiculture Winter Loss Survey*, <http://www.omafra.gov.on.ca/english/food/inspection/bees/2018winterloss.htm#results> [December 1, 2018].
12. Agriculture et Agroalimentaire Canada, 2017. *Aperçu statistique de l'industrie apicole canadienne 2017*, <http://www.agr.gc.ca/fra/industrie-marches-et-commerce/renseignements-sur-les-secteurs-canadiens-de-lagroalimentaire/industrie-horticole/rapports-sur-l-industrie-horticole/apercu-statistique-de-lindustrie-apicole-canadienne-2017/?id=1539180642166> [December 1, 2018].
13. MAPAQ. *Portrait-diagnostic sectoriel de l'apiculture au Québec*, [https://www.mapaq.gouv.qc.ca/fr/Publications/Portrait\\_Diagnostic\\_sectoriel\\_Apiculture\\_complet.pdf](https://www.mapaq.gouv.qc.ca/fr/Publications/Portrait_Diagnostic_sectoriel_Apiculture_complet.pdf) [December 1, 2018].

14. Écohabitation, 2014. *Apiculture urbaine : des abeilles sur nos toits*,  
<https://www.ecohabitation.com/guides/1303/apiculture-urbaine-des-abeilles-sur-nos-toits/>  
[December 1, 2018].
15. MAPAQ. *Agriculture urbaine : guide de l'apiculteur urbain*,  
[https://www.mapaq.gouv.qc.ca/SiteCollectionDocuments/Agricultureurbaine/Fiche\\_Agricultureurbaine\\_Apiculture.pdf](https://www.mapaq.gouv.qc.ca/SiteCollectionDocuments/Agricultureurbaine/Fiche_Agricultureurbaine_Apiculture.pdf)  
[December 1, 2018].
16. Écohabitation, 2014. *Apiculture urbaine : des abeilles sur nos toits*,  
<https://www.ecohabitation.com/guides/1303/apiculture-urbaine-des-abeilles-sur-nos-toits/>  
[December 1, 2018].
17. MAPAQ. *Agriculture urbaine : guide de l'apiculteur urbain*,  
[https://www.mapaq.gouv.qc.ca/SiteCollectionDocuments/Agricultureurbaine/Fiche\\_Agricultureurbaine\\_Apiculture.pdf](https://www.mapaq.gouv.qc.ca/SiteCollectionDocuments/Agricultureurbaine/Fiche_Agricultureurbaine_Apiculture.pdf)  
[December 1, 2018].
18. ZIELINSKI, Sarah, July 9 2014. *Why the City Is (Usually) Hotter than the Countryside*,  
<https://www.smithsonianmag.com/science-nature/city-hotter-countryside-urban-heat-island-science-180951985/> [December 1, 2018].
19. BOMA BEST, July 2018. *BOMA BEST Sustainable Buildings 3.0 Universal Questionnaire*,  
<http://bomacanada.ca/wp-content/uploads/2016/09/BOMA-BEST-3.0-Universal.pdf> [December 1, 2018].
20. THE STAR. 2017. *Hillcrest Mall installs beehives on roof to fight declining bee population*.  
<https://www.thestar.com/news/gta/2017/06/07/hillcrest-mall-installs-beehives-on-roof-to-fight-declining-bee-population.html> [December 1, 2018].
21. THE STAR, 2017, *Manulife Brings Two Bee Hives to Toronto*,  
<https://www.thestar.com/news/gta/2017/07/10/manulife-brings-two-bee-hives-to-toronto.html> [December 1, 2018].
22. WILSON-RICH, Noah, *The Bee: A Natural History*, Princeton, New Jersey: Princeton University Press, p. 16.
23. Cultive ta ville, *La biologie de l'abeille*,  
<https://cultivetaville.com/fr/encyclopedie/apiculture-urbaine/la-biologie-abeille/> [December 1, 2018].
24. WILSON-RICH, Noah, *The Bee: A Natural History*, Princeton, New Jersey: Princeton University Press, p. 16.
25. Espace pour la vie. *Abeilles, guêpes et bourdons*,  
<http://m.espacepourlavie.ca/abeilles-guepes-et-bourdons> [December 1, 2018].
26. MAPAQ. *Agriculture urbaine : guide de l'apiculteur urbain*,  
[https://www.mapaq.gouv.qc.ca/SiteCollectionDocuments/Agricultureurbaine/Fiche\\_Agricultureurbaine\\_Apiculture.pdf](https://www.mapaq.gouv.qc.ca/SiteCollectionDocuments/Agricultureurbaine/Fiche_Agricultureurbaine_Apiculture.pdf)  
[December 1, 2018].



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