

UVic Sustainability Scholars Program

Circular Hub Best Practices Report

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Disclaimer

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Territorial Acknowledgement

This author acknowledges that the work for this project took place on the unceded territories of the ləkʷəŋən peoples and respects the Songhees, Esquimalt, and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day.



CASE STUDY

CIRCULAR HUB

BEST PRACTICES REPORT

August, 2025

SYNERGY
FOUNDATION

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
INTRODUCTION	4
BACKGROUND	5
Community Context	5
C&D Waste in the Circular Economy	5
CIRCULAR HUB MODELS	7
The Role and Functions of a Circular Hub	7
Methodology.....	11
1. Driver and Partnership Models	12
2. Network Structure Models	16
3. Financing Models.....	21
Supporting Communities and Small Businesses.....	24
BEST PRACTICES	26
1. Circular Economy for Salvaged Lumber, King County	26
2. Re-Use Innovation Center, Bellingham & New York City	30
3. Material Innovation Center, Port San Antonio	34
4. The Dock+, Port Alberni.....	37
POLICY SCAN	40
Policies within the Three Communities	40
Policy References from Other Jurisdictions	42
RECOMMENDATIONS	43
Potential Challenges and Opportunities of the Circular Hub.....	43
Additional Recommendations.....	44
RESOURCES	45
REFERENCES	46

EXECUTIVE SUMMARY

This report provides research support for the development of the Circular Economy Hub Project in three rural communities: the City of Duncan, the City of Port Alberni, and the City of Powell River. These hubs are designed with a focus on construction and demolition (C&D) waste, aiming to promote circular practices in material recovery and reuse.

The report presents a systematic overview of circular economy strategies related to C&D materials, including a summary of recovery methods for key material types. A total of 17 case studies were selected based on their relevance to the local context of the three communities or their potential to offer valuable inspiration. From these cases, three categories of Circular Hub models have been identified:

1. Driver and Partnership Models

- Driven by public agencies, in collaboration with nonprofits, community-based organizations, and/or private entities
- Driven by non-profit or community-based organizations, with or without support from public agencies and private entities
- Driven by private entities, with support from public agencies, nonprofits, or other businesses

2. Network Structure Models

- A centralized physical location brings together materials, related organizations and individuals
- A decentralized network of physical sites or a virtual platform
- A hybrid model that combines centralized facilities with distributed networks

3. Financing Models

- Government-funded
- Privately financed
- Public-private partnerships

To provide concrete examples of how these models are applied in practice, the report highlights four best-practice cases that offer practical insights and implementation experience:

- Circular Economy for Salvaged Lumber, King County
- Re-Use Innovation Center, Bellingham & New York City
- Material Innovation Center, Port San Antonio
- The Dock+, Port Alberni

INTRODUCTION

This report outlines best practices of Circular Hubs in North America and globally to support the development of the **Circular Economy Hub** Project in three rural communities in the Vancouver Island Coast (VI-Coast) region. These hubs aim to apply circular economy principles to diversify local economies and attract new economic opportunities.

The primary objective of this study is to identify and evaluate existing models from case studies, analyze how project-specific enablers and constraints influence model selection, and provide actionable recommendations tailored to the development of Circular Hubs in the target communities.

The report includes the following components:

1. Research background, including an overview of the three communities and construction and demolition (C&D) waste, which is the focus of the project;
2. Circular Hub models extracted from case studies, with a brief description of their key characteristics;
3. Four in-depth case studies that serve as strong reference points for this project;
4. A high-level review of relevant policies in the target communities and other jurisdictions that can serve as references;
5. Practical recommendations for establishing and developing Circular Hubs;
6. A list of useful resources, including businesses in related industries.

BACKGROUND

Community Context

The three communities — City of Duncan (within the Cowichan Valley Regional District), City of Port Alberni (within the Alberni-Clayoquot Regional District), and City of Powell River (within the qathet Regional District) — have long been shaped by traditional resource-based industries such as forestry, mining, and fishing¹⁻³. In recent years, all three have been affected by recent mill curtailments and closures, leading to job reductions and increasing economic uncertainty⁴⁻⁷. At the same time, other sectors have emerged or expanded. Tourism has become a growing contributor to the local economy, along with services, education, manufacturing, and green industries⁸⁻¹⁰.

Together, the three communities are home to approximately 39,000 people, with Duncan about 5,000¹¹, Port Alberni 20,000², and Powell River around 14,000¹². Compared to the provincial average in British Columbia, they have relatively older population profiles. The downturn in mill operations may result in a pool of skilled workers available for emerging economic opportunities.

Each community includes one or more First Nations, such as the Cowichan Tribes in Duncan, the Hupacasath and Tshesahht First Nations in Port Alberni, and the Tla'amin Nation in Powell River. Notably, the Tla'amin Nation has reacquired a substantial portion of the former paper mill site in Powell River, which may play a key role in future economic development¹³⁻¹⁴.

C&D Waste in the Circular Economy

The Circular Hubs in this project will prioritize the diversion and repurposing of C&D waste, a highly valuable yet challenging material for local governments that traditionally end up in landfills. C&D waste can account for about one-third of landfill-bound waste¹⁵⁻¹⁶, with wood alone making up roughly 30% to 50% of the total¹⁷⁻¹⁸. Other common C&D waste materials include concrete, gypsum, metal, asphalt, glass, tile, carpet, ceramic plumbing fixtures (such as toilets, sinks, and bathtubs), and architectural salvage (such as cabinets, doors, and windows).

There is considerable potential to reduce C&D waste through both upstream and downstream strategies¹⁹. Upstream approaches involve adaptive reuse, relocation or retrofitting buildings instead of demolishing them, which can substantially reduce waste generation. Downstream strategies focus on deconstruction, salvage, and the recycling of building materials.

Using deconstruction strategy can result in a total material recovery rate of up to 95%²⁰. A pilot case study from Metro Vancouver demonstrated that deconstructing a single-family home can divert around 50 tonnes of building materials, including 15 tonnes salvaged for reuse²¹, compared to a current regional salvaging rate of only one percent²². In addition to diverting waste, deconstruction practices also contribute to substantial reductions in greenhouse gas emissions. As shown in a study conducted in the City of Portland, deconstructing a typical 1,200-square-foot wood-framed house, rather than demolishing it, results in a net carbon benefit of 7.6 metric tons of CO₂e per house²³.

Among C&D waste materials, clean dimensional lumber is suitable for reuse²⁴ and is in demand on Vancouver Island²⁵. Rare wood types, such as old-growth fir or oak lumber, carry both higher market value and heritage significance²⁶. Ceramic plumbing fixtures and architectural salvage items can also be reused to a limited extent, depending on their condition. Currently, most recycling of C&D materials involves downcycling, where the recycled materials are used to produce products of lower quality or value than the original. Table 1 outlines the potential recovery methods for various types of C&D waste materials.

Table 1. Common Recovery Methods for C&D Waste Materials

Compiled based on sources: 18,24-29. For more information on related companies, see the chapter titled “Resources.”

	Material Type	Recovery Methods
Wood	Clean, dimensional, and large lumber segments (especially solid wood)	<ol style="list-style-type: none"> 1. Reused as structural or non-structural building components (structural use requires certified engineer approval) 2. Recycled into new wood products such as finger-jointed lumber and dowel-laminated timber
	Clean composite sheet wood (e.g., plywood, OSB, CLT, LSL, LVL, MDF*)	<ol style="list-style-type: none"> 1. All types except MDF can be recycled into products like finger-jointed lumber, Crosslam tiles, and wood fiber insulation 2. MDF is generally not recycled due to its composition and the lack of specialized recycling infrastructure

Painted, stained, or treated wood	<ol style="list-style-type: none"> Used as padding material for mud and dust control Chipped and applied as temporary road base at the landfill Ground and used as fuel
Concrete	<ol style="list-style-type: none"> Used in the construction of municipal roads Crushed and reused in new concrete production (limited by transport distance)
Gypsum (Drywall)	<ol style="list-style-type: none"> Recycled into new drywall Used as an ingredient in cement production (lower value application)
Metal	Scrap metal is widely recycled for use in manufacturing
Asphalt	Recycled as road base material
Glass	<ol style="list-style-type: none"> Traditionally ground up and used as construction aggregate Used for sand blasting Currently sent to landfill due to the absence of recycling options on the Island
Tile	Generally not recycled on the Island; in some cases, crushed and used as aggregate or fill, depending on the tile type

**Acronyms: OSB – Oriented Strand Board; CLT – Cross-Laminated Timber; LSL – Laminated Strand Lumber; LVL – Laminated Veneer Lumber; MDF – Medium-Density Fiberboard.*

During the salvage and recovery of C&D waste, hazardous materials must be carefully identified, sorted, and tested – particularly asbestos. Asbestos was widely used in building materials for homes constructed prior to the 1990s³⁰. Drywall must be tested for asbestos before it can be recycled; if testing is not conducted, the material must be sent to landfill²⁵. In addition to asbestos, other hazardous substances commonly found in C&D waste include isocyanates, crystalline silica, lead, mercury, formaldehyde, Freon, and abandoned chemicals²¹. These materials pose significant health and environmental risks and require specialized handling and disposal procedures.

CIRCULAR HUB MODELS

The Role and Functions of a Circular Hub

Traditionally, materials follow a linear path throughout a building’s life cycle. Raw materials are extracted, manufactured, used in construction, mostly remain in place during the occupancy phase, and are ultimately disposed of as C&D waste after

demolition. In contrast, a circular economy aims to keep materials in circulation by applying a holistic approach that spans the entire lifecycle. This begins with thoughtful design strategies such as design for deconstruction and sustainable or green design, continues through procurement practices that prioritize reused and recycled materials, and extends to processes that reconnect the end of the cycle to its beginning, including the sorting, storage, processing, and resale of C&D materials.

A Circular Hub for C&D materials supports the key processes outlined above within a circular economy. In both practice and academic literature, various forms of Circular Hubs exist, each adapted to different project scales and objectives. In the context of this report, a Circular Hub is envisioned as a community-based system designed to facilitate essential circular processes specifically related to C&D waste.

A Circular Hub brings together businesses, community members, and other key contributors to:

- Facilitate the flow of recovered materials and services,
- Promote innovation and product development,
- Support workforce upskilling and business transition training,
- Stimulate market growth for reused and recycled materials.

The role of a Circular Hub within the circular economy for buildings is illustrated in Figure 1.

Shifting from demolition to deconstruction is the first step toward material recovery. Materials are separated on-site during deconstruction. Those suitable for reuse, refurbishing, manufacturing or recycling are diverted to the Circular Hub, while the remainder is sent to a transfer station for further sorting and processing, or to a landfill for disposal.

To determine the most suitable reuse approach, it is essential to conduct a pre-deconstruction assessment that evaluates the building's condition. If the structure is appropriate for upstream strategies such as repurposing or relocation, those options should be prioritized. If downstream strategies are more appropriate, the process proceeds with material screening and salvage audits. Where possible, materials and

building components should be digitized to support inventory tracking, design integration, and lifecycle assessment.

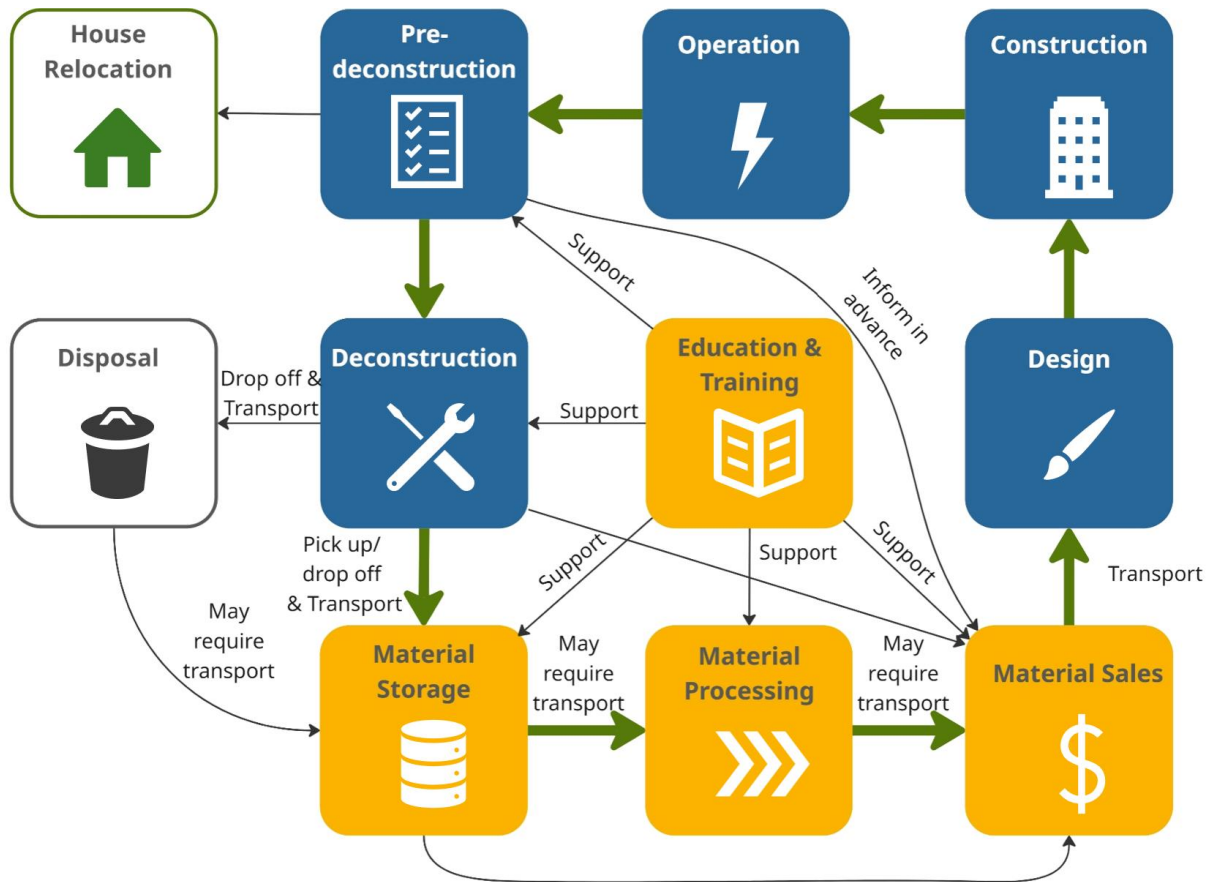


Figure 1. The Role and Potential Functions of a Circular Hub within the Circular Economy for Buildings

A Circular Hub may serve the following key functions after deconstruction, feeding recovered materials back into the construction process:

1. Material Storage

The Hub can store both accepted materials awaiting sorting and redirection, as well as processed materials held in inventory. Storage may be either centralized or decentralized. Centralized storage facilities are particularly valuable in supporting a circular economy, as they enhance scalability, improve inventory reliability, and

allow customers to access a wide variety of materials in one location. This not only saves time, eliminating the need to wait for specific buildings to be deconstructed before materials become available, but also fosters innovation by providing consistent access to diverse materials.

Storage can take the form of permanent material banks, while temporary or pop-up material banks can serve as a flexible supplement. In addition to construction materials, the Hub can also store building tools and function as a community tool library to promote shared use.

2. Material Processing

This function includes dismantling, cleaning, and processing of recovered materials, as well as remanufacturing or creative repurposing by designers. It also involves grading of processed materials to ensure quality and usability. While some of these activities can take place directly at the Hub, others may be handled by specialized material recycling companies in partnership with the Hub.

3. Material Sales

The Hub can serve as a marketplace, selling materials for use in new construction, retrofitting, or temporary structures. This process involves effective matchmaking between sellers and buyers, showcasing materials, providing detailed product information, and offering quality assurance to build buyer confidence.

4. Education & Training

C&D waste recovery is a growing industry that requires skilled professionals across all stages of the value chain. As such, the Circular Hub can include space dedicated to education and training programs. This function is closely tied to community engagement, helping raise awareness, build local capacity, and encourage public participation in circular practices. These spaces can also host workshops and events geared toward a broader audience, supporting knowledge exchange and innovation.

Methodology

This report presents a scan of existing cases that most closely align with the envisioned Circular Hub model. It is important to note that no single model serves as a universal standard, as each case is shaped by its own unique enablers and constraints. Moreover, none of the existing models exactly mirror the context of this Circular Hubs Project. Therefore, the selection of models should be approached as a flexible combination, informed by a thorough background analysis and potentially enhanced by innovative ideas tailored to local conditions.

Seventeen selected cases, along with their basic information, are summarized in Table 2. The selection process was guided by several key criteria, including suitability for community-scale implementation, involvement of small businesses, a focus on C&D waste, and potential applicability to the VI-Coast region. Since Circular Hubs are still a relatively new concept and the project has unique requirements, not all selected cases meet every criterion. Many were included because they reflect part of the selection principles. For example, the study is not limited to hubs focused solely on C&D waste. Those dealing with other material streams were also considered to introduce innovative perspectives.

While many cases are based in British Columbia, the selection also includes examples from other parts of Canada, the United States, and abroad to broaden the range of insights and inspire creative solutions for this project.

Table 2. List of the Circular Hubs and their basic information

Project Name	Location	Time	Targeted Materials
The Rebuild Hub	Vancouver, B.C., Canada	2012-present	C&D materials
Re-Build-It Centre	Whistler, B.C., Canada	2011-present	C&D materials, furniture and appliances
Squamish ReBuild	Squamish, B.C., Canada	2011-present	C&D materials
Kindred Rebuild	Powell River, B.C., Canada	2023-present	C&D materials and used household
The Dock+	Port Alberni, B.C., Canada	2021-present	Fish and fresh food

Project Name	Location	Time	Targeted Materials
BMEx	Virtual, serves south and central Vancouver Island	2024-present	C&D materials, and materials from manufacturing
KORE Re-Hub	Kootenays, B.C., Canada	2025-present	Used outdoor gear
HodgePodge Lodge	Strathcona County, Alberta, Canada	2023-present	Used and salvaged household items
RE Store	Whatcom County, Washington, USA	1993-present	C&D materials
Circular Economy for Salvaged Lumber	King County, Washington, USA	2005-present	Clean wood
Material Innovation Center	Port San Antonio, Texas, USA	2022-present	C&D materials (mostly wood)
Reuse Warehouse	Houston, Texas, USA	2009-present	C&D materials
Materials Marketplace	Austin, Texas, USA	2012-2020	C&D materials, plastics, organics, and packaging
Re-Use Innovation Center	Bellingham, WA & New York City, NY, USA		C&D materials (mostly wood)
The Junction Zero Waste Hub	New Zealand	2020-present	C&D materials, furniture and household items
CMEx	Ireland	2022-2024	C&D materials
restado+Concular	Germany	2014-present	C&D materials

From the reviewed cases, several common models have been identified and are summarized across three key dimensions:

- Driver and Partnership Models
- Network Structure Models
- Financing Models

1. Driver and Partnership Models

Circular Hubs typically emerge in response to identifiable market demand. In many cases, informal exchanges or trades may already be occurring among community



members and local businesses, or there may be a broader regional market with supply and demand dynamics.

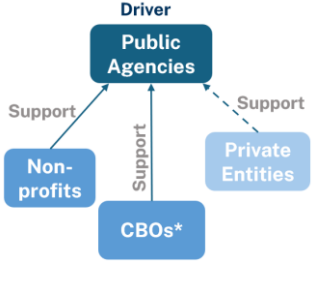
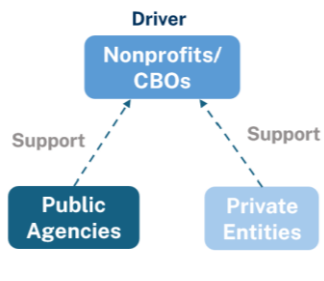
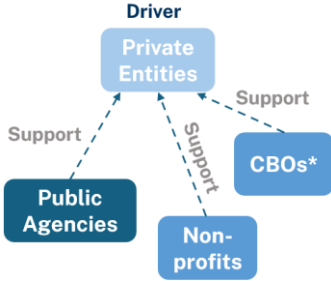
For C&D materials, the supply side often serves as the starting point. In some regions, a group of aging buildings constructed around the same time may simultaneously reach the end of their lifecycle, leading to a wave of demolitions and generating a large volume of reusable and recyclable materials. In other cases, deconstruction and demolition companies may already have stockpiles of salvageable materials on hand, creating a strong incentive to find downstream users. On the demand side, many communities face housing shortages or a need for affordable housing, low-cost renovations, and repairs. Recovered C&D materials, which are typically much more cost-effective than new materials, can be well-suited to meet these needs.

When a foundational market exists, the development of a Circular Hub can be catalyzed by mission-driven organizations or public-sector actors, with the support of key partners who help mobilize resources, coordinate key contributors, and drive implementation.

Based on the cases analyzed in this report, Driver and Partnership Models can be categorized into three types. These models, along with corresponding case examples, are illustrated in Table 3.

Table 3. Driver and Partnership Models

Model Category	 Driven by Public Agencies, in Collaboration with Nonprofits, Community-Based Organizations, and/or Private Entities	 Driven by Non-Profit or Community-Based Organizations, with or without Support from Public Agencies and Private Entities	 Driven by Private Entities, with Support from Public Agencies, Nonprofits, or Other Businesses

Model Diagram			
Case Examples	<ul style="list-style-type: none"> • Circular Economy for Salvaged Lumber (King County) • Material Innovation Center (Port San Antonio) • HodgePodge Lodge (Strathcona County) • Materials Marketplace (Austin) • The Dock+ (Port Alberni) • The Junction Zero Waste Hub (New Zealand) • Reuse Warehouse (Houston) 	<ul style="list-style-type: none"> • The Rebuild Hub (Vancouver) • BMEx (Vancouver Island) • CMEx (Ireland) • Re-Build-It Centre (Whistler) • Squamish ReBuild (Squamish) • RE Store (Whatcom County) • Kindred Rebuild (Powell River) • KORE Re-Hub (Kootenays) 	<ul style="list-style-type: none"> • restado+Concular (Germany) • Re-Use Innovation Center (Bellingham & New York City)

**CBOs: Community-Based Organizations*

1. Driven by Public Agencies, in Collaboration with Nonprofits, Community-Based Organizations, and/or Private Entities

Public sector leadership can provide strong institutional backing, making it easier for projects to access a range of critical resources such as land, buildings, funding, and supportive policies. For example, the **Reuse Warehouse in Houston** receives storage space from the City of Houston and partial funding from the Houston-Galveston Area Council³¹. In **King County**, public leadership successfully advocated for a change to the state building code, expanding the allowable use of salvaged lumber and paving the way for broader market acceptance³².

Projects led by public agencies often carry greater legitimacy and convening power, which can facilitate partnerships with industry stakeholders. Depending on the

jurisdictional level of the lead agency, such projects also have the potential to grow to a larger scale and operate with long-term stability. For instance, **King County's Circular Economy for Salvaged Lumber** has evolved over two decades into a well-established network of dozens of participating businesses.

However, overreliance on government support may present risks. Projects that are not designed to become financially self-sustaining may face discontinuation if public funding or policy support ends. For example, **Materials Marketplace in Austin** was initially grant-funded and failed to achieve self-sufficiency. After the funding period ended, the project had to be taken over by the private platform [Rheaply](#) and underwent a strategic repositioning³³.

2. Driven by Non-Profit or Community-Based Organizations, with or without Support from Public Agencies and Private Entities

In this model, project scale and impact are often closely linked to the capacity and reach of the lead organization. Large nonprofits such as Habitat for Humanity operate ReStores around the world. In **Greater Vancouver**, four physical ReStores and one online shop collectively form the regional **Rebuild Hub**³⁴. Another ReStore in Nanaimo is set to expand in summer 2025 in partnership with the **BMEx** project, serving as its first physical location³⁵.

At the local level, many smaller nonprofits or community-based organizations operate independently at a smaller scale, often as secondhand building supply stores. Examples include the **Re-Build-It Centre in Whistler** and **Squamish ReBuild**, which typically receive less external support and therefore adopt more modest operational models to remain viable.

Nonprofits or community-based organizations in this category often collaborate with public agencies to access land, funding, and other forms of support. Projects can also explore opportunities to use vacant properties owned by private landlords, making use of all available resources. However, limited internal capacity can sometimes pose challenges to long-term sustainability. For instance, **Squamish ReBuild** encountered financial and staffing issues and ultimately sought a private business partner to take over management responsibilities³⁶.

3. Driven by Private Entities, with Support from Public Agencies, Nonprofits, or Other Businesses

Privately driven Circular Hubs are less common, but some successful examples demonstrate the potential of this model when built on a solid foundation of strategic partnerships and diversified revenue streams. **The Re-Use Innovation Center in Bellingham** benefits from long-term resource accumulation and a collaborative network of private-sector partners, along with multiple income channels.

In Europe, **restado** began as an online platform for recovered building materials and secured backing from leading industry associations and companies. Building on this foundation, it developed **Concular**, a pioneering software tool that digitizes materials and building components and integrates seamlessly with **restado**, significantly improving recovery efficiency³⁷. Only after establishing a strong technological and business model did the initiative receive government support, which enabled the launch of a physical hub³⁸.




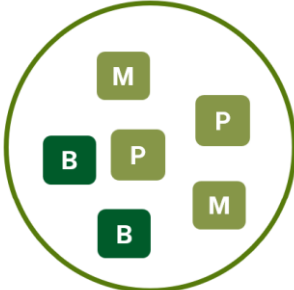
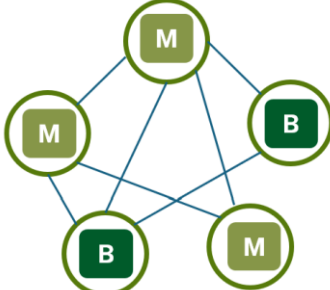
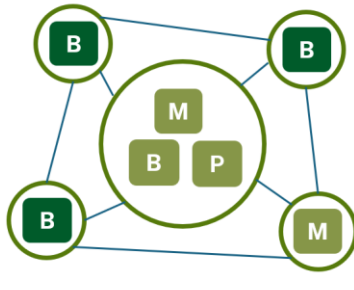
2. Network Structure Models

A Circular Hub is a network composed of businesses, community and non-profit organizations, and skilled professionals. Within this network, C&D materials are processed, exchanged, and circulated. It also facilitates the sharing of equipment and tools. A well-functioning Hub can foster the exchange of knowledge and information, spark creativity and innovation, and serve as a showcase for both technology and culture. It may also act as a platform for community engagement and the development of local industries. Selecting an appropriate network structure enables more effective resource mobilization and coordination, helping to unlock the Hub's full potential.

This report identifies three primary network structural models that a Circular Hub can adopt: **centralized, decentralized, and hybrid**, as illustrated in Table 4. The network structure of a Hub is not static, and it may evolve over time as the Hub grows and adapts. A centralized Hub may develop an online platform to enhance user engagement, resulting in a shift toward a hybrid model. It may also expand by establishing additional locations, thereby becoming a decentralized model. Likewise, a decentralized virtual platform might later add physical storage facilities, leading to the formation of a hybrid structure. These shifts reflect the dynamic

nature of Circular Hubs and their ability to respond to changing needs and capacities.

Table 4. Network Structure Models

Model Category	 <p>A Centralized Physical Location Brings together Materials, Related Organizations and Individuals</p>	 <p>A Decentralized Network of Physical Sites or a Virtual Platform</p>	 <p>A Hybrid Model that Combines Centralized Facilities with Distributed Networks</p>
Model Diagram			
Case Examples	<ul style="list-style-type: none"> • The Dock+ (Port Alberni) • Re-Build-It Centre (Whistler) • Squamish ReBuild (Squamish) • Kindred Rebuild (Powell River) • HodgePodge Lodge (Strathcona County) • Material Innovation Center (Port San Antonio) • Reuse Warehouse (Houston) • RE Store (Whatcom County) • The Junction Zero Waste Hub (New Zealand) 	<ul style="list-style-type: none"> • The Rebuild Hub (Vancouver) • BMEx (Vancouver Island) • KORE Re-Hub (Kootenays) • Circular Economy for Salvaged Lumber (King County) • Materials Marketplace (Austin) • CMEx (Ireland) 	<ul style="list-style-type: none"> • restado+Concular (Germany) • Re-Use Innovation Center (Bellingham & New York City)

**M: Materials; B: Businesses; P: Professionals*

1. A Centralized Physical Location Brings together Materials, Related Organizations and Individuals

This model is more commonly found in relatively small geographic areas, such as within a single community or a cluster of nearby communities. The space can be either covered or open-air, depending on the types of materials stored or the activities conducted.

In this report, some cases classified under this model consist of just a single warehouse or a used materials store (e.g. **Reuse Warehouse in Houston** and **Squamish ReBuild**). Strictly speaking, these are not fully developed Circular Hubs but rather essential nodes within the model – facilities that receive incoming materials and either resell them or distribute them free of charge to those in need.

Building on this basic function, a Circular Hub incorporates additional components such as collaborative workspaces (**Material Innovation Center at Port San Antonio**), equipment and tool sharing (**Re-Build-It Centre in Whistler**), as well as training and education (**the Junction Zero Waste Hub in New Zealand**). These added elements support knowledge and skill exchange, bringing the model closer to a more integrated and functional Circular Hub.

2. A Decentralized Network of Physical Sites or a Virtual Platform

This model can be applied within a city, across a county, or even at the national level. It may take the form of a network of dispersed physical sites or operate as a virtual platform connecting businesses and organizations.

The first type, physical site networks, is exemplified by the **KORE Re-Hub in the Kootenays**, which operates drop-off sites across six communities for ski equipment, supplemented by roaming gear repair stations⁴¹. However, this case deals with outdoor gear, which is generally easier to transport. When applied to C&D materials, the model faces additional logistical challenges. For example, the **Rebuild Hub in Vancouver** has an online shop that improves information access, but its four ReStore locations are spread across different areas with limited coordination. As a result, the flow of C&D materials between sites is inefficient, and the types and quantities of available materials vary widely. Deconstruction companies are often

reluctant to deliver to multiple dispersed sites, which affects the project's development potential²⁶.

The second type, a virtual platform-based model, is shown by **BMEx**, which focuses on B2B matchmaking between suppliers and buyers³⁵. This approach is common among many digital platforms, which often avoid being accountable for the quality of specific materials in order to reduce risk. In contrast, another approach involves the use of material passports and relies on standardized assessment systems to provide greater transparency and traceability of materials. Regardless of the method used, ensuring the credibility of information and setting appropriate thresholds for participation is essential. Carefully vetting users and verifying listings is critical to maintaining a functional marketplace. While these platforms may not take responsibility for the quality of individual material listings, they must still uphold an overall standard to prevent a marketplace of mixed or unreliable materials³⁸.

This model also holds significant potential for integration with Building Information Modeling (BIM), enabling the creation of an expanded virtual material bank. Materials can be catalogued while still embedded in buildings, allowing for more effective planning and targeted recovery²⁸. The founder of **restado** has developed a software — **Concular** — for this purpose, integrating the collected digital material information with its second-hand marketplace. This pioneering initiative has attracted the attention of local governments and led to collaboration opportunities³⁷.

Virtual decentralized models often require a physical center as they grow, in order to store materials and improve operational efficiency. For example, **King County** has been actively searching for a space to establish a salvaged lumber warehouse, recognizing it as a key step to scaling up its program³². Similarly, **restado** initially developed as a virtual platform (Model 2), but after gaining traction and government support, it acquired a 1,000 m² storage facility in Berlin and began collaborating with more local governments³⁸, thus transitioning to a hybrid model (Model 3).

3. A Hybrid Model that Combines Centralized Facilities with Distributed Networks

The hybrid model combines the strengths of both centralized and decentralized approaches. It allows for efficient material handling, facilitates knowledge exchange

and community development, and expands the reach to a wider network of businesses by improving access to information for both buyers and sellers.

However, this model may require more resources to maintain both centralized facilities and distributed networks. As a result, it is usually an upgraded version of Model 1 or Model 2, developed after the Hub reaches a certain stage of maturity. In practice, the choice still depends on the specific context and the resources available to the Hub. For example, the **Re-Use Center in Bellingham** operates with a 1,200-square-foot warehouse and a reclaimed lumber yard, along with decentralized storage sites located at deconstruction sites. It also maintains a business network and its own online platform. These components have been gradually built up over time, and although none are large in scale, together they form a relatively complete and stable hybrid model.

Although still in the conceptual stage, the **Re-Use Innovation Center in New York City** illustrates an ambitious and forward-looking version of this model. It envisions a centralized facility that combines material recovery with business incubation, public workshops, and a value-added showroom, demonstrating how a hub can serve as an engine for innovation⁴⁰. An online platform, [NYC Circular](#), is currently under development. It will feature a directory, a wish list page to capture demand, and a materials exchange page to showcase available supply. Together, the platform and the Re-Use Innovation Center will form a robust hybrid model.

Additionally, temporary or pop-up sites can serve as a valuable complement to a centralized material bank. They are especially effective in large-scale construction or urban redevelopment contexts, as they help reduce transportation demands and promote the reuse of materials within the local area. This approach contributes to a more flexible and dynamic hybrid model. An illustrative example of a temporary site comes from Roskilde, Denmark²⁸. The city operates a central, permanent facility spanning 7,500 m² located outside the city center, along with a temporary pop-up material bank in Skt. Hans — one of Roskilde's newly developed districts. This secondary site is housed in a repurposed garage building. It serves the short-term local demand for handling used building materials and will be closed once the need diminishes.

Temporary sites like this often make use of city-owned land that is expected to remain undeveloped for several years, or vacant properties made available by public or private owners. Tax breaks or deductions can be offered as incentives for private

developers to utilize their unused land and reduce carrying costs³². However, security measures such as fencing may be necessary, and potential restrictions related to contamination should also be taken into account. In Bodø, Norway³⁹, for example, a municipally owned plot near the city center is scheduled to remain unused for four to five years while the soil settles. During this period, the site is being used as an interim storage and sorting area for soil and materials generated by urban construction projects. This use is permitted under concessions from environmental authorities, which include specific restrictions on contamination levels and the maximum height of soil fill.




3. Financing Models

The financial structure of a Circular Hub typically involves both upfront capital investment and ongoing operational costs. For projects with physical sites, the largest portion of initial investment often goes toward securing land or buildings, along with acquiring equipment, vehicles, and other infrastructure. Operational costs generally include staff salaries, training program expenses, and maintenance.

Circular Hubs often receive C&D materials as donations from individuals or companies. Tax credits can help further offset disposal and labor costs, providing an added incentive for these donations. Potential revenue streams may include the sale of recovered materials, membership fees, equipment rentals, and other service-based income. However, based on the case studies, only a minority of Circular Hubs are currently able to break even or generate a profit. Most still require additional funding support, often in the form of government or charitable funding. This reliance on external support is partly due to the fact that many Circular Hubs are still in early stages of development with limited profit-making capacity, and also reflects their inherent characteristics of a Circular Hub, including its benefits for the public good – environment and community.

Broadly, these models can be categorized into three types: **government-funded**, **privately financed**, and **public-private partnerships**, as shown in Table 5.

Table 5. Financing Models

Model Category	 Government-Funded	 Privately Financed	 Public-Private Partnerships
Model Diagram			
Case Examples	<ul style="list-style-type: none"> • Circular Economy for Salvaged Lumber (King County) • HodgePodge Lodge (Strathcona County) • Materials Marketplace (Austin) • The Dock+ (Port Alberni) • Reuse Warehouse (Houston) • CMEx (Ireland) 	<ul style="list-style-type: none"> • Squamish ReBuild (Squamish) • Kindred Rebuild (Powell River) • RE Store (Whatcom County) • restado+Concular (Germany) • Re-Use Innovation Center (Bellingham & New York City) 	<ul style="list-style-type: none"> • The Rebuild Hub (Vancouver) • BMEEx (Vancouver Island) • Re-Build-It Centre (Whistler) • KORE Re-Hub (Kootenays) • Material Innovation Center (Port San Antonio) • The Junction Zero Waste Hub (New Zealand)

1. Government-Funded Model

Cases in this category often overlap with those driven by government entities. Funding may come in the form of grants (federal, provincial, or local), or low-interest government loans.

One key advantage of this model is that governments are more likely to provide physical space for storage and operations. This can take several forms:

- Repurposing existing government-owned vacant buildings: For example, the **Material Innovation Center at Port San Antonio** operates in a building

originally constructed to house military officers at the former Kelly Airfield. It is now leased from the government at no cost⁴².

- Constructing new facilities with government funding: The **HodgePodge Lodge in Strathcona County** is a 1,500-square-foot facility built using a wide range of salvaged and second-hand materials. The project was completed with a budget of \$275,000 and operates on an annual budget ranging from \$10,000 to \$15,000⁴³.
- Temporary land use agreements: In some cases, where urban development projects have long timelines, temporary use of government-owned land may be granted to Circular Hub initiatives prior to redevelopment²⁸.

2. Privately Financed Model

This model relies on funding from non-profit or for-profit organizations. For example, **Kindred Rebuild in Powell River** secured a repayable grant of \$50,000 from First Credit Union during its startup phase⁴⁴, and is run by [inclusion Powell River](#), a non-profit organization. Compared to the other two models, this approach carries higher financial risk, particularly if funding is limited or operations are not financially sustainable. A successful example is the **Re-Use Innovation Center in Bellingham**, which draws on multiple funding sources to support its operations. Another case is **restado + Concular in Germany**, which focuses on digital platforms and software and operates in an asset-light form. Although it has recently collaborated with government entities and received storage space, for most of its development, it has belonged to this privately financed category.

3. Public-Private Partnerships Model

This model combines funding from both public and private partners including government, non-profit organizations, community groups, and businesses, resulting in a more resilient and financially stable structure.

An example is the **Re-Build-It Centre in Whistler**. The Centre operates out of a building leased from the Regional Municipality of Whistler at a nominal cost. It receives government loans to support its operational expenses, while securing additional funding through private contributions and community donations. Furthermore, the Centre generates substantial revenue through the sale of reused items, a success largely driven by the area's seasonal population, who frequently buy and sell household goods. As a result of this diversified funding model, the

combined revenue of the Re-Build-It Centre and the Re-Use-It Centre exceeded \$2 million in the 2022–2023 fiscal year¹⁹.

Supporting Communities and Small Businesses

A key function embedded in Circular Hub models is the engagement of local communities and the support of small businesses. These elements are often central to a hub's success, while also contributing to broader community well-being.

Many cases already leverage the hub's functions like training and resource sharing to benefit communities. Projects that are led by or developed in close partnership with community-based organizations often demonstrate stronger community engagement and more effective local service delivery. For example, at the **Material Innovation Center in Port San Antonio**, salvaged materials are reused at no cost to support the development of affordable housing for the community. At the **Re-Build-It Centre in Whistler**, store revenues are reinvested into local community services. This direct feedback loop encourages residents to donate materials and shop locally, generating consistent revenue that sustains and grows the project¹⁹.

Training and education programs offered through Circular Hubs also play a critical role in helping community members, including historically underemployed populations, transition into new careers. For instance, **King County** offers training programs targeted at individuals with prior incarceration histories. These programs are typically low-cost or free (as seen at the **Material Innovation Center in Port San Antonio**), and in some cases, participants are even paid to encourage participation (as in **King County** and the **RE Store in Whatcom County**). Because C&D-focused courses often include hands-on, on-site learning, wraparound supports such as housing, meals, and transportation are important, frequently provided through nonprofit or community partnerships. In addition to technical skills, some programs also offer general job readiness training, including resume preparation and interview practice.

Support for small businesses is another benefit provided by the hub. It manifests through shared equipment and space, particularly in hub models with centralized locations. **The Dock+ in Port Alberni**, for example, provides shared production and storage spaces to startups and small enterprises in the local food sector, generating revenue through memberships, workstation rentals, and equipment fees at the same time.



Knowledge-sharing and entrepreneurial support are equally valuable. The **Materials Marketplace in Austin**, for instance, organizes the [RE]Verse Pitch Competition to connect companies with byproduct materials and inspire innovative reuse solutions. Winners receive both funding and tailored business development support³³.

In summary, Circular Hub models are chosen based on the specific enablers and constraints present in each context. The first step is to identify available resources and set realistic, attainable objectives. Each model has its strengths and limitations, and selecting the most appropriate one requires thoughtful alignment between goals and capacities.

BEST PRACTICES

The four best practices were selected for their notable strengths in areas such as government leadership, forward-looking vision, business support, education and training, and heritage preservation. These standout qualities make them valuable benchmarks for other projects to reference.

1. Circular Economy for Salvaged Lumber, King County



Figure 2. Clean Wood collected at King County’s Bow Lake Transfer Station

Photo Credit: [Seattle 2030 District](#).

King County is committed to advancing the circular use of salvaged lumber, such as clean wood recovered from C&D waste and pallets, primarily sourced from the public and small businesses. The concept originated 20 years ago in response to the significant volume of lumber generated annually from house demolitions, much of which was being landfilled. Over time, the government has sustained and expanded this effort, working closely with local businesses to form a mature circular wood ecosystem that encompasses assessment, deconstruction, wood processing, design, and construction. Supportive public policies have played a critical role in expanding the salvaged lumber market.

Hub Models



Driven by Public Agencies, in Collaboration with Nonprofits, Community-Based Organizations, and/or Private Entities

This case is led by the local government, in partnership with local businesses and community-based organizations. The government's leadership is evident in its role building the circular wood ecosystem, driving policy changes in waste management and building codes, allocating grants to support business partners, and hosting public information platforms. Its collaboration with community-based organizations is especially visible through training and workforce development programs.



A Decentralized Network of Physical Sites or a Virtual Platform

Although King County is actively pursuing a centralized physical facility for salvaged lumber — a Salvaged Lumber Warehouse — this goal has not yet been achieved. During this process, the County has positioned itself as a primary tenant for prospective warehouse spaces, with the intention of subleasing to small businesses. This strategy increases the likelihood of securing a site but is complicated by the longer timelines required for government decision-making, which may not align with private landlords' expectations. Currently, the County is working with private businesses by providing grants to help cover market-rate leases, with the aim of establishing one or more storage locations. As of now, however, the initiative remains primarily virtual and decentralized.



Government-Funded

This initiative is largely supported by public funding from federal, city (Seattle), and county (King County) sources. Specifically, King County's [Re+ Circular Economy grants](#) have been awarded to three businesses — Earthwise Architectural Salvage, Re-Use Consulting, and Second Use — to support pilot projects that expand the local market for salvaged lumber.

Key Partners and Participants

- Driver: King County

- Training partnership: nonprofits and Community-based organization (Community Passageways, Hope for Homies, and the Freedom Project)
- Local business collaborators:
 - Salvage assessment agents (e.g., Second Use Building Materials, Earthwise Architectural Salvage, Ballard Reuse)
 - Deconstruction and demolition companies (e.g., Sledge, Dedicated Deconstruction, IQ Solutions LLC, RE-USE Consulting)
 - Wood processors (e.g., Rainier Wood Recyclers, DTG Enterprises)
 - Architecture and design firms
 - Construction companies (e.g., Skanska)
 - Builders actively using salvaged lumber (currently around three builders)



Figure 3. Collaborative Relationships among Key Partners and Participants in King County's Circular Economy for Salvaged Lumber

Community Engagement

King County's Solid Waste Division launched the Green Workforce Development Training to address the shortage of deconstruction and salvage workers while creating pathways to higher-wage jobs for BIPOC (Black, Indigenous, and People of Color) and frontline communities.

The program is delivered in partnership with three BIPOC community-based organizations — Community Passageways, Hope for Homies, and the Freedom Project — and is aimed at people with prior incarceration histories. King County covers all costs, including \$21 per hour for trainees over the eight-week, six-hours-a-day program. The CBOs handle logistics such as transportation, case management, wraparound support, equipment, facilities, language services, insurance, and stipend distribution⁴⁵.

The training consists of three parts: (1) [Roots of Success](#): a four-week environmental literacy course covering green career fields such as sustainable building, energy, and wastewater treatment, along with job-readiness skills like resume and cover letter writing and interview preparation; (2) hands-on deconstruction training: a four-week, on-site program led by Dave Bennink of the [Building Deconstruction Institute](#), where participants learn practical salvage and deconstruction methods⁴⁶; and (3) OSHA 10 safety training. All training materials are available in multiple languages.

To date, two cohorts have graduated, totaling 18 participants. All have expressed interest in continuing in the construction and demolition industry⁴⁵, and some have already started their own small businesses.

Highlight

A set of coordinated policies in King County supports the circular economy for salvaged lumber:

- Building code: King County successfully proposed a change to the Washington State Building Code allowing structural reuse of sawn lumber without a grade stamp for both residential and commercial projects^{32,47}. The lumber is treated as equivalent in quality to spruce pine fir, the lowest grade used for framing over the past century, greatly expanding its potential

applications. Previously, each piece required inspection and stamping by a certified grader at about \$200 per hour plus labor. The building code also promotes salvage assessments and deconstruction.

- Waste disposal restrictions: Seattle and King County ban wood disposal³², with C&D landfill fees increased on January 1, 2025, to further encourage recycling⁴⁸.
- Mandatory salvage assessments: Several King County jurisdictions require salvage assessments as part of the permitting process under certain conditions. In Seattle, they are mandatory for all demolitions and for renovation projects valued over \$75,000 or larger than 750 square feet⁴⁹.
- Deconstruction incentives: Seattle offers \$4,000 per residential project and \$6,000 per commercial project to encourage participation in its pilot deconstruction program. The initiative aims to expand deconstruction, build familiarity with the process, collect data, and identify innovations⁵⁰.

Lessons Learned

- King County's financial analysis of a centralized physical facility shows that if the property is government-owned and offered at no cost or below-market rent, the project can be economically viable. However, securing suitable property remains one of the biggest hurdles.
- Co-location of several different entities is critical for creating synergies, saving significant resources and time.
- A common gap is the lack of accessible business support services. Many small enterprises in circular economy initiatives struggle with administrative work such as billing, invoicing, grant writing, and tax management. A shared support structure like a business administration cooperative or an incubator-style business park could provide dedicated assistance and address this widespread weakness.
- Achieving the material volume needed for commercial-scale use is challenging; current markets tend to suit private buyers and small projects.

2. Re-Use Innovation Center, Bellingham & New York City

The owner of the Re-Use Center in Bellingham, Dave Bennink, has been engaged in consulting, training, and building deconstruction since 1993. His vision for the Re-

Use Innovation Center is to create a circular economy within the hub, rather than functioning merely as a participant in a circular economy. The Bellingham Center represents the foundational version of his hub concept, taking in and reusing reclaimed materials such as dimensional lumber, doors, windows, antiques, and complete building kits. The proposed Re-Use Innovation Center in New York City expands the concept. The local government has invited Dave to help design and establish it, leveraging the expertise of local businesses. While a network of collaborators is taking shape, the search for a physical site is underway to anchor the project. The NYC Center embodies an ambitious vision of what a fully realized circular hub could be.

Hub Models (with diagram)



Driven by Private Entities, with Support from Public Agencies, Nonprofits, or Other Businesses

The Bellingham Center operates without government funding. It is privately run and works in collaboration with ten circular microbusinesses. In contrast, the NYC Center is supported by the local government and collaborates with nonprofits such as [Big Reuse in Brooklyn](#), expanding its capacity to serve a larger number of projects.



A Hybrid Model that Combines Centralized Facilities with Distributed Networks

The Bellingham Center includes a retail store with up to 800,000 pounds of inventory and a reclaimed lumber yard. Four or five micro-businesses work on site, while others operate from different locations.

The NYC Center is still securing a location. It plans to bring together around 15 to 20 businesses in one space to encourage cross-sector collaboration⁵¹. An online platform, NYC Circular, is currently being developed, which will form an extended virtual collaboration network. The physical facility is envisioned to include:

- Material intake: receiving materials, cataloging them, and assigning value
- Workshops and showroom: providing raw materials for creative or value-added projects; artists, workshops, and incubators will have priority access to select materials; completed works will be displayed in the showroom

- Retail areas: selling materials and finished products through the showroom, sales floor, or lumber yard
- Complementary services: including a recycling station, repair workshop, and a continuing-education center⁵²



Privately Financed

The Bellingham Center is privately funded and supported through diversified revenue streams to reduce dependency on a single source. Based on available information, the NYC Center will be financed partly through donations.

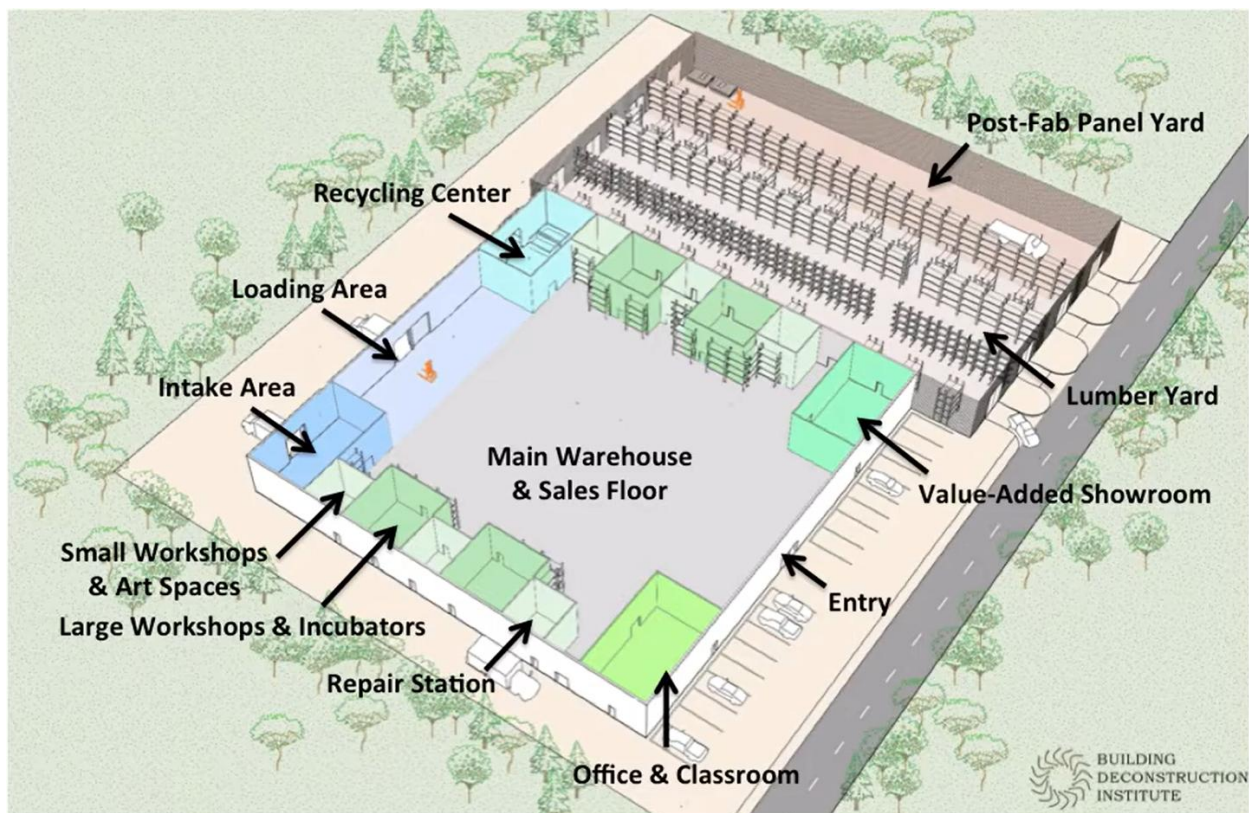


Figure 4. The Concept Rendering of the Re-Use Innovation Center in New York City
 Photo Credit: NYC Circular.

Key Partners and Participants

- Driver: Re-Use Consulting and Building Deconstruction Institute (run by Dave Bennink)
- Local business collaborators:
 - Deconstruction and demolition companies
 - Builders actively using salvaged materials
 - Appliance repair businesses (in Bellingham)
 - Businesses producing building products from salvaged materials (in NYC)
 - Nonprofits (e.g., Big Reuse in Brooklyn, which operates both a physical and online store)

Community Engagement

Re-Use Consulting and the Building Deconstruction Institute provide training in 44 U.S. states, 4 Canadian provinces, 1 territory, and other countries⁵³. Training topics include deconstruction for workers and businesses, remanufacturing, reuse operations, repair clinics, Re-Use Innovation Centers, and job or entrepreneurial skills. Programs also target hard-to-employ populations (as in the King County case, where Dave also plays a leading role).

Highlight

The Re-Use Innovation Center concept combines both supply and demand by hosting businesses that use salvaged materials to create new products or build new structures. To date, Dave's team has deconstructed over 5,000 projects and constructed 240 new ones using recovered materials. Centralizing these businesses in one facility allows for affordable rents, shared tools and equipment, resource sharing, and increased customer exposure. It also fosters knowledge spillovers and supports micro-business incubation.

Lessons Learned

- Position the hub so that vehicles heading to the landfill pass it first, creating more opportunities to intercept and reclaim materials before they are discarded.

- Smaller projects can serve as easier entry points, particularly when no permits are required, such as doghouses, chicken coops, or sheds. When reclaimed wood cannot be used structurally, focus on uses like flooring or paneling.
- While private funding can sustain operations, leveraging grants can amplify the hub’s impact and accelerate growth.

3. Material Innovation Center, Port San Antonio

The Material Innovation Center (MIC) at Port San Antonio serves as the “last stop before the landfill,” functioning as a hub for repairing, reusing, and reimagining deconstruction materials. The site’s roots date back to 1920, when it was originally built to house military officers at the former Kelly Airfield, and was added to the National Register of Historic Places in 2003. Since 2022, these historic buildings have been operating as laboratories for future craftspeople, material innovators, and local community participants. The project’s historic setting, along with key partners’ expertise in preservation and the city’s policy priorities, give it significant value in historic preservation. Beyond that, it also supports equity and affordable housing goals. Looking ahead, the City of San Antonio envisions the MIC as a mixed-use circular economy innovation campus and a hub for reuse-focused businesses and organizations.



Figure 5. Students in Material Innovation Center Learning Building Deconstruction

Photo Credit: [NYC Circular](https://nycircular.com/).

Hub Models (with diagram)



Driven by Public Agencies, in Collaboration with Nonprofits, Community-Based Organizations, and/or Private Entities

The MIC is led by the City of San Antonio's Office of Historic Preservation, and the city provides warehouse space rent-free. The Living Heritage Trades Academy, under this office, works closely with the nonprofit Power of Preservation to deliver apprenticeships, hands-on training, and classroom-based learning in traditional building construction techniques and materials⁴².



A Centralized Physical Location Brings together Materials, Related Organizations and Individuals

The MIC center utilizes the historical Bungalows at Port San Antonio and their attached garages, serving multiple functions: materials storage, public workshops, hands-on training, a community tool library under development⁵⁴, and a future small business accelerator for transforming reclaimed materials into new uses. Donated materials are sorted and stored in garage bays by type⁴².



Public-Private Partnerships

Funding comes from a combination of a limited city budget and grants from community partners. Notable contributors include [Rehabarama](#) — a housing preservation initiative that pairs volunteer contractors with homeowners for repair and maintenance projects — and the Living Heritage Trades Academy, whose resources help expand the MIC's educational and preservation work⁴². The community tool library will operate on a pay-what-you-can rental model to supplement revenue.

Key Partners and Participants

- Driver: City of San Antonio's Office of Historic Preservation
- Training partnership: nonprofit organization (Power of Preservation) and educational institute (Living Heritage Trades Academy)
- Corporate donors (e.g., Rehabarama)
- Local business collaborators:

- Deconstruction and demolition companies
- House movers
- Landfill operators
- Waste haulers
- Area reuse stores in San Antonio (e.g., Habitat for Humanity)

Community Engagement

The MIC accepts donations of materials and tools, which are sorted and redistributed at no cost to local qualifying organizations. These resources directly support affordable housing efforts, historic preservation projects, and other community impact initiatives⁵⁴. Deconstruction often becomes a neighborhood event — residents sometimes request to purchase materials on-site. These exchanges foster small-scale circular economies while strengthening community ties.

Education and training help to build a pool of skilled people for deconstruction businesses. Over the past decade, the workshops conducted by the Office of Historic Preservation and the Power of Preservation have provided free or low-cost training to more than 2,500 participants in San Antonio⁵⁴. Graduates can hone their skills and pursue certification as contractors themselves. Since 2019, San Antonio has seen a more than 500% increase in the number of local deconstruction contractors. This surge has also made services more accessible and affordable for the community.

Educational programs include classroom-based instruction and eight- to ten-week paid apprenticeships under local master deconstruction contractors, with hands-on courses in wood window restoration and architectural carpentry — skills applied directly in the rehabilitation of the MIC bungalows. Wraparound services such as childcare, transportation, and emergency groceries ensure that students can complete their training successfully⁵⁵.

Highlight

Port San Antonio functions as a major economic engine and innovation hub for the city of San Antonio. The MIC is located within the 1,900-acre Tech Port campus, which hosts prominent sectors such as aerospace, defense, global logistics,

manufacturing, cybersecurity, and education. In this context, the city envisions the MIC as a mixed-use circular economy hub where reuse-focused businesses and organizations can co-locate, share resources, form public–private partnerships, and cultivate innovative circular enterprises⁵⁶.

The MIC's future vision includes receiving and storing reclaimed materials, providing workshop space for education and workforce training, and hosting gatherings to learn about and implement circular projects. Planned expansions could add research and laboratory facilities, shared office space, and event venues. This illustrates the potential of a circular hub to connect with a broad range of industries⁵⁶.

Lessons Learned

- Early coordination is critical. Anticipating upcoming projects, such as knowing when one building is planned for deconstruction while another nearby is set for restoration, allows for better alignment. Increasing public access to such information can improve matchmaking between projects. Ideally, salvaged materials would move directly from one site to another without passing through the MIC warehouse. This level of forecasting and coordination is challenging and uncommon, but it is key to achieving maximum efficiency.
- The deconstruction ordinance provides regulatory support. Adopted by the San Antonio City Council in October 2022, the ordinance requires certain older properties approved for demolition to be deconstructed instead⁵⁷. Before its passage, contractors often had only 24 hours to salvage materials before demolition. Now they have both the time and the authority to recover materials properly.
- Expanding end uses. Redirecting salvaged materials into common public infrastructure, such as bus stops, park benches, and shade structures⁵⁸, demonstrates how locally recovered resources can replace virgin materials for everyday needs.

4. The Dock+, Port Alberni

The Dock+ is one of 13 regional food hubs established across British Columbia to stimulate local food processing and innovation⁵⁹. Specializing in fish and other fresh foods, particularly seafood, the hub fosters a supportive ecosystem where start-ups and small businesses in the local food sector can thrive through shared resources

and collaboration. It opened in 2021, and in 2024 received a grant from the B.C. Ministry of Agriculture and Food, which has the potential to support an expansion of the project⁶⁰, though detailed plans are still being finalized.



Figure 6. Shared Equipment and Tools in the Commercial Kitchen of the Dock+
 Photo Credit: [The Dock+](#).

Hub Models (with diagram)



Driven by Public Agencies, in Collaboration with Nonprofits, Community-Based Organizations, and/or Private Entities

Dock+ is owned by the Port Alberni Port Authority in partnership with the City of Port Alberni. It leases space to local food producers and works with a range of community partners, including Indigenous organizations.



A Centralized Physical Location Brings together Materials, Related Organizations and Individuals

The 17,000-square-foot Dock+ building offers shared space and equipment for food producers, including a 1,254-square-foot commercial kitchen available to businesses, nonprofits, and individuals for food or beverage production⁶¹, as well as cold storage and an ice plant⁵⁹. The 2024 grant provides funding for a 3,000 sq. ft. infrastructure addition, along with new rooftop condensing units for flash freezing, a

racking system for cold storage, and a transformer to power the expanded facility⁵⁹. Future plans also envision a retail shop and a café or boutique restaurant⁶¹.



Government-Funded

Dock+ was launched with \$1.5 million in provincial funding through the Province of British Columbia and [Island Coastal Economic Trust](#) (founded by the Province and governed by coastal communities) to retrofit a former Port Fish plant and transform it into a food hub⁶¹. The 2024 expansion grant from the B.C. Ministry of Agriculture and Food totals \$2,995,786. Revenue streams include rental income, membership fees, and equipment fees.

Key Partners and Participants

- Driver: Port Alberni Port Authority and the City of Port Alberni
- Partnership: Community partners, including Indigenous partners (e.g. Huu-ay-aht First Nations Fisheries LP)
- Tenants (local food producers, subject to change):
 - Anchor tenants leasing space in the 17,000-square-foot shared facility (Cascadia Seaweed; Flurer Smokery; Forest For Dinner; Alberni Ice; Canadian Seafood Processing; Nova Harvest; Tastes Local; and Circadian Wellness⁵⁹)
 - Small enterprises utilizing the community kitchen (e.g., Off-Grid Camper Café, Hatch to Harvest and Forest For Dinner⁵⁹)

Community Engagement

Dock+ plays a vital role in helping small businesses in the community grow and thrive, while also creating more economic opportunities. With the upcoming expansion of processing space, the hub is expected to support 15 full-time positions in Port Alberni, along with many indirect jobs in the aquaculture and seafood sectors around Vancouver Island⁶⁰.

This development also aligns with the concerns of Indigenous partners, who emphasize the importance of food harvested in their territories. For them, using the

kitchen in the hub is not only about production – it’s a matter of food security and food sovereignty⁵⁹.

Dock+ is also a place for community events, including arts-related activities. Collaborations with local artists showcase the diversity of local cuisine and the creative economy of Port Alberni, reflecting the hub’s vision and deepening its integration into the community. These efforts aim to make mural art a recurring feature in the city⁶²⁻⁶³.

Highlight

Membership at Dock+ includes discounted rates on workstations and equipment, access to the commercial kitchen, use of storage shelves, participation in member events, and support through social and marketing promotion. There are several types of membership available: full-time, part-time, and casual. These options are designed to accommodate a variety of needs while also contributing to the project’s revenue generation.

Lessons Learned

- The hub can also be used as a venue for community activities, such as mural art projects and material exchange events.
- Providing access to shared equipment that would be too expensive for individual businesses is a key advantage, similar to the benefits seen in C&D material hubs. This approach promotes resource sharing, mutual support, and revenue generation where applicable.

POLICY SCAN

Policies within the Three Communities

Regarding C&D waste policies, all three communities where the Circular Hubs are planned permit C&D waste disposal at designated local landfills. Among them, only Duncan offers detailed guidelines for sorting demolition waste by material type³⁰:

- **Clean Wood & Lumber:** These materials can be recycled at CVRD Recycling Centres and other approved facilities. They are processed into wood chips used as fuel for nearby mills.
- **Painted & Treated Wood:** Must be separated and placed in the designated bin for painted and treated wood at Bings Creek Recycling Centre. Painted wood is now converted into engineered fuel, which replaces coal at the LaFarge Canada cement plant in Richmond, B.C.
- **Rubble:** Accepted at CVRD Recycling Centres. Concrete, in particular, can be reused to produce new concrete or as base material for roads and runways.
- **Roofing Materials:** Asphalt shingles, as well as tar and gravel roofing tiles, are accepted at CVRD Recycling Centres. Metal roofing materials, including flashing, should be sorted and placed in the scrap metal bin.

If materials cannot be separated into individual categories, they are classified as general C&D waste. CVRD Recycling Centres do not accept unsorted C&D waste. This type of material must be taken to Coast Environmental (Duncan location) or directly to the Regional District of Nanaimo's Cedar Road landfill. Operating a municipal solid waste or recycling facility within CVRD requires a Waste Stream Management Licence⁶⁴.

In Port Alberni, C&D waste is directed to the Alberni Valley Landfill. The landfill requires wood waste to be diverted, and mixed municipal solid waste (MSW) is subject to additional disposal fees⁶⁵. Wood waste is ground and recycled into hog fuel for biomass energy recovery, compost, and landscaping. Scrap metal is accepted in AV Landfill, ACRD Recycling Depot, WC Landfill⁶⁶, and by companies such as Alberni Foundry LTD.

The Resource Recovery Centre in the qathet Regional District currently accepts only MSW and organic waste (yard and food). C&D waste is not accepted at this facility and must be taken to Augusta Recyclers until service expansion occurs⁶⁷.

While a building permit is required for demolition activities in all three communities, there are no specific requirements related to C&D waste treatment as a condition for permit approval, such as minimum recycling rates. Additionally, no further provisions concerning C&D waste management are found in the local building or waste bylaws.

Policy References from Other Jurisdictions

Green Demolition Bylaw No. 11023 – City of Vancouver

This bylaw sets salvage requirements based on the age of the house:

- For homes built before 1910 or listed as heritage properties, at least 90% of materials (by weight) must be salvaged through deconstruction.
- For homes built between 1910 and 1950, a minimum of 75% reuse and recycling is required.
- For homes built after 1950, deconstruction remains voluntary.

To obtain a demolition permit, homeowners must complete a Recycling and Reuse Plan/Wood Salvage Report, pay the required deposits and fees, and submit a Recycling and Reuse Compliance Report for review after deconstruction in order to receive a refund.

As an added incentive, materials donated to Habitat for Humanity may be eligible for a tax receipt, helping to reduce the overall cost of deconstruction.

Demolition Waste and Deconstruction Bylaw – City of Victoria

This bylaw applies to demolition permits for all single-family homes and duplexes built before 1960.

Applicants are required to submit a \$19,500 deposit when applying for a demolition permit. This deposit is fully refundable if the required salvage target is met.

The salvage target 40 kilograms of salvaged material per square metre of above-ground floor area. This target is typically achieved through deconstruction, or in some cases, by relocating the entire house.

RECOMMENDATIONS

Potential Challenges and Opportunities of the Circular Hub

1. Ban specific C&D materials from landfills or increase tipping fees

The low cost of raw wood compared to the high labor cost of material recovery creates economic disincentives. Landfill disposal is also often cheaper than recycling. These disadvantages can be mitigated by banning certain materials from landfills or increasing tipping fees. Promoting the financial and material value of using salvaged materials in value-added production is equally important.

2. Ensure safety and quality through certified processes

Maintaining the quality of salvaged materials is essential, and the presence of hazardous substances poses additional risks. Using material passports, collaborating with certified deconstruction companies, and working with experienced material processors can help ensure safety and quality.

3. Establish a physical warehouse to secure supply and attract buyers

Buyers are more likely to purchase salvaged materials when sufficient volumes and consistent supply are available. A dedicated warehouse is key to meeting these needs and supporting hub operations.

4. Plan logistics for transporting heavy materials

As the hub expands, transporting heavy materials will present logistical challenges. Coordinated planning can help optimize transportation efficiency and reduce costs.

5. Integrate salvaged materials into project planning early

New building projects often have timelines of several years, which may not align with when salvaged materials become available. Identifying reusable materials

before demolition and integrating them into early project planning can resolve this mismatch.

6. Select hub locations that balance accessibility and cost

The hub should be accessible and close to transportation routes to minimize hauling distances, but high real estate costs near urban centers can be prohibitive. Publicly owned properties could help meet this need, and temporary locations may serve as interim solutions.

Additional Recommendations

1. Adopt a phased implementation approach

Developing hubs gradually and refining them over time can reduce risks and allow for adjustments based on experience.

2. Build strong stakeholder networks

Coordinating diverse local stakeholders and maintaining long-term engagement are essential to hub success.

3. Budget for dedicated staff

While volunteers can provide valuable support, one or two dedicated staff members are important for day-to-day management and expertise in deconstruction. Staff wages should be included in the planning budget.

RESOURCES

Category	Name of the Resource	Description
Waste Calculation	Demolition Waste Generation Rates Calculator in Metro Vancouver	Helps estimate the weight of various types of waste materials generated from a specific house in different areas of Metro Vancouver.
Deconstruction & Demolition Company	Deconstructors Demolition Inc.	Located in Nanaimo, BC. Serves Vancouver Island and the Okanagan region.
C&D Material Processing	Urban Machine (Oakland, California)	Uses robotics and AI in inline equipment to automate wood processing. De-nails and converts wood into dimensional lumber, which is then finger-jointed for DLT manufacturing.
	Urbanjacks (British Columbia)	Produces finger-jointed lumber using reclaimed wood. Currently suitable for non-structural use.
	Timber tiles	Produces timber tiles using Hemlock sustainably harvested from forests on Vancouver Island.
	Intronic (British Columbia)	Designed and built the first DLT mass timber manufacturing line.
	Northstar Clean Technologies	A new company based on the Mainland, specializing in recycling asphalt shingles.
Training and education	Roots of success (U.S.)	Environmental education and job training program.
	The ReUse People (Vancouver and Vancouver Island)	Offers deconstruction training.

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