



Benny Farm

Integrated Urbanism Studio
Exercise 2 Precedent <-> Typology <- Morphology

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Chuchu Xie
Meiyun Zhang



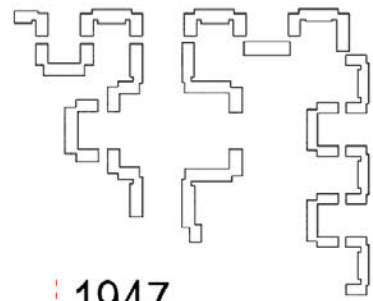
Benny Farm, Montreal, QC

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TIMELINE

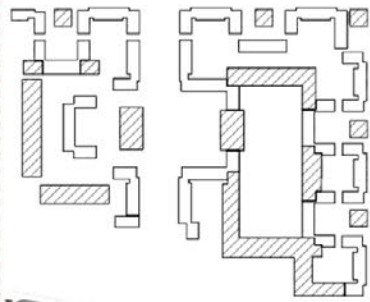
History of Benny Farm



1947
Benny Farm built,
designed by architect
Harold J. Doran

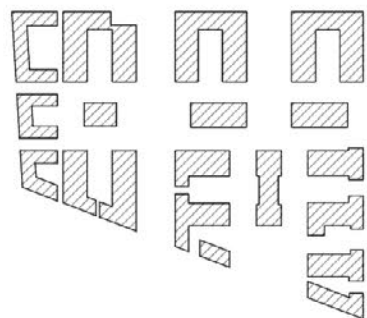


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Counter-proposal
by L'Oeuf (100% conservation)



1990
CMHC discloses plan to raze
site, relocate tenants

1991
CMHC proposal by Gauthier
Guité Daoust Architectes (100%
new construction)



1995 - 1997
Demolition begins, CMHC
to relocate residents

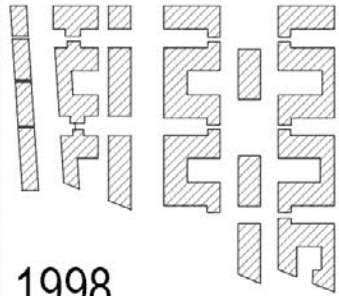


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Round Table organized
by CLC

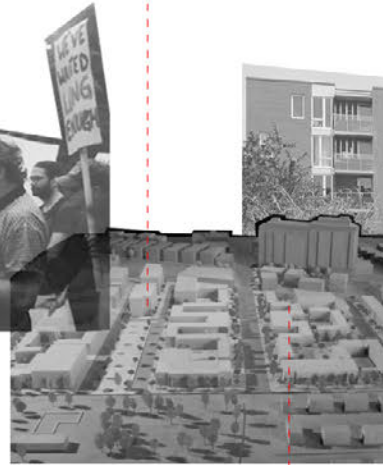
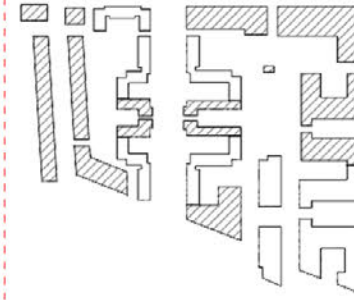
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Development plan presented to the
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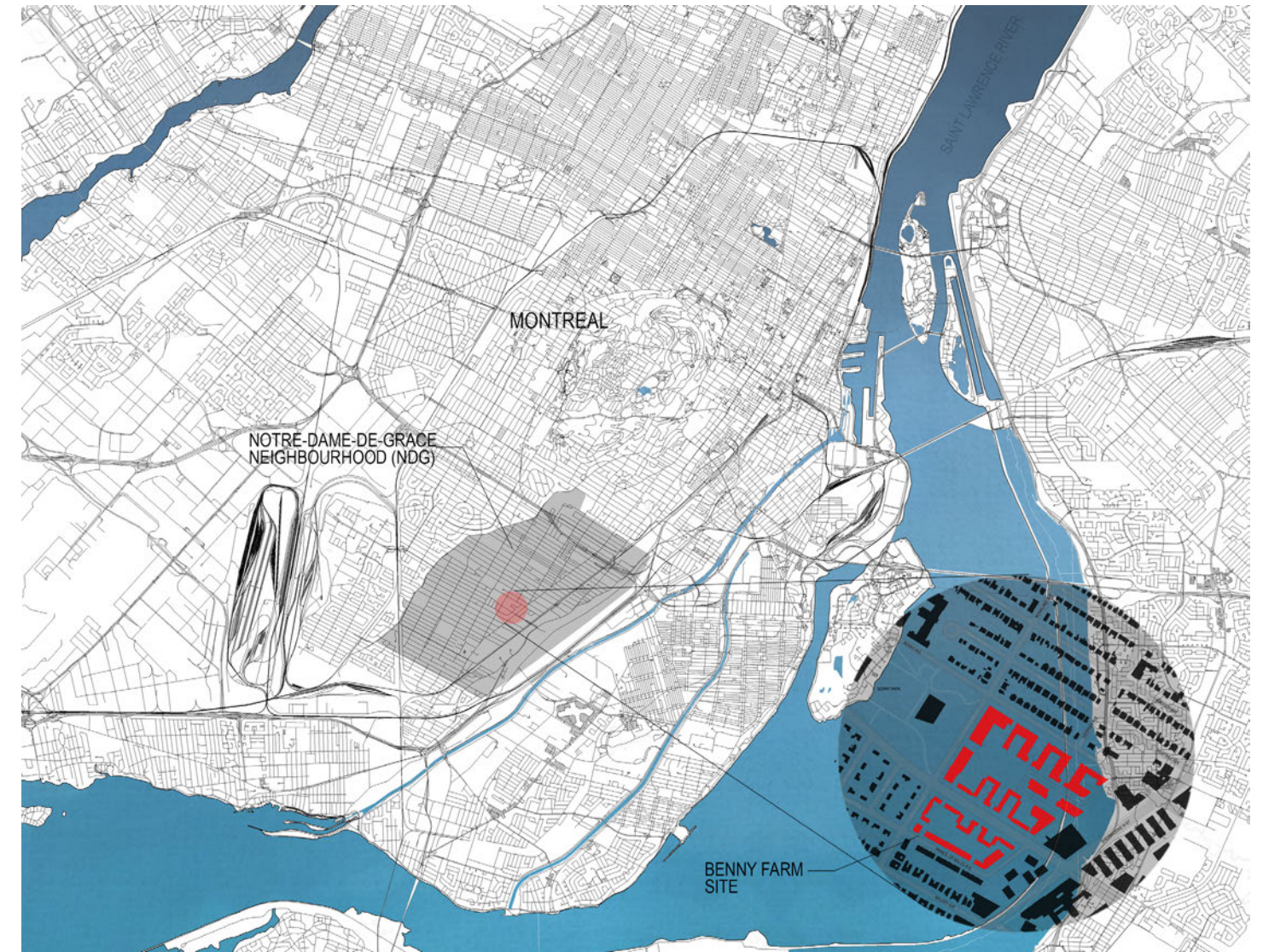
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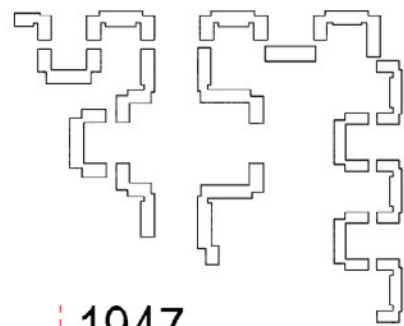
Introduction

Benny Farm was built in 1947 by the government of Canada for the returning veterans of WW2. However, in the early 1990s, with an aging population and decaying buildings, the Central Mortgage and Housing Corporation proposed the demolition of Benny Farm. This generated a mobilization the community surrounding Benny Farm who were strongly against the relocation of veterans and the demolition of the buildings. A long debate ensued between different parties involved in the design of the final redevelopment project, including citizens, veterans and housing activist.



Montreal Map NDG With Benny Farm Site

Early History



1947

Benny Farm built,
designed by architect
Harold J. Doran



Canadian Welfare State

To respond to social unrest around housing issues after the war but also coincided with the formation of the Canadian welfare state and a period that many historians consider pivotal in terms of Canadian housing policy. Under the postwar government of Prime Minister Louis St. Laurent, public housing, federal hospital grants and assistance programs for disabled and blind persons were initiated.

Community Living

The historical roots of the project went further back: it exemplified the evolution of ideas about neighbourhood design and worker's housing that were rooted in the early 20th century.

Social Unrest

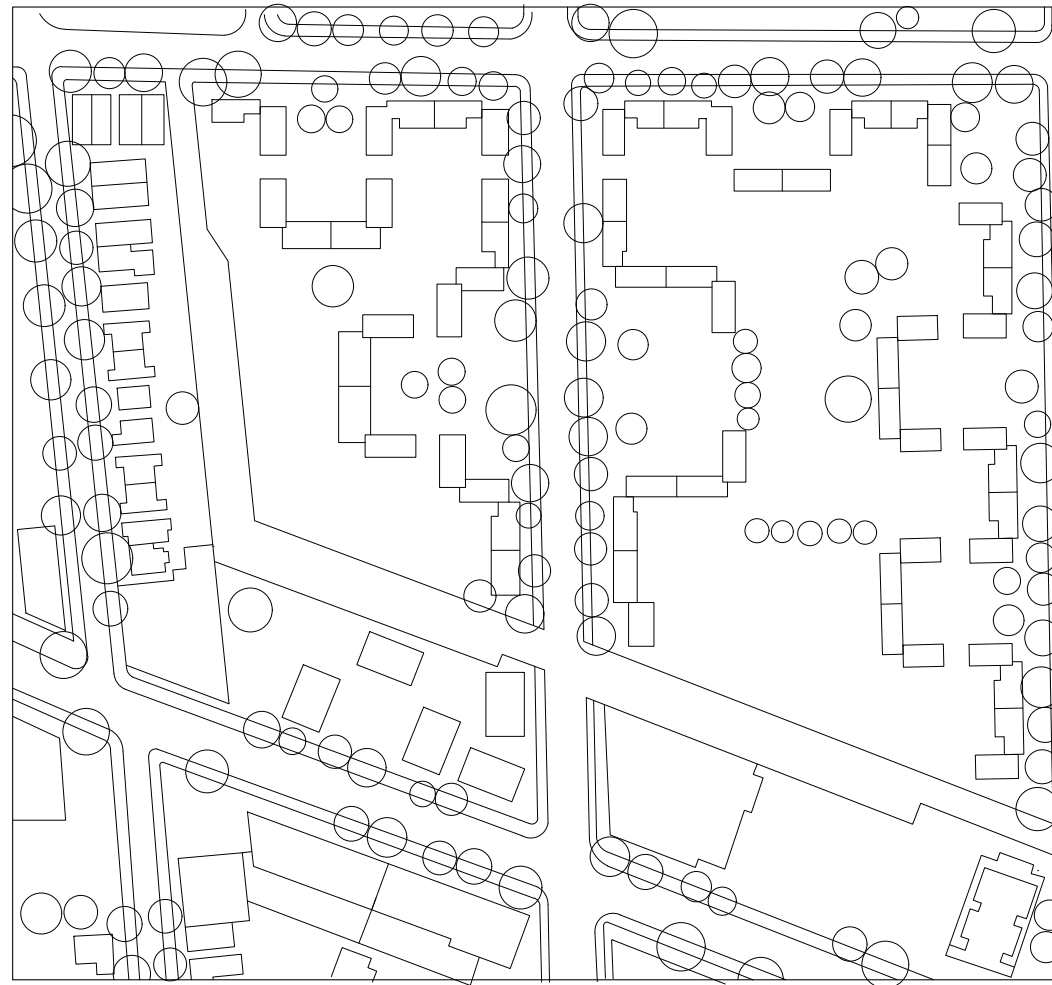
the impetus to build veterans' housing stemmed fear of repeating the social unrest that had occurred after World War I. Housing problems had been an important component of the turbulence that had culminated in the Winnipeg strike and the sympathy strikes across Canada in 1919.

Industry Boom

The war brought the return of prosperity. The growth had different sources. The automobile industry was partially responsible, as the number of automobiles produced annually quadrupled between 1946 and 1955. A housing boom, stimulated in part by easily affordable mortgages for returning servicemen, fueled the expansion. The major focus of this first period was economic growth through the creation of construction jobs.

Returning Veterans

Immediately after World War II a large supply of housing was needed quickly for returning veterans, newly formed families, and an expanding urban population fostered by natural increase, migration, and immigration.

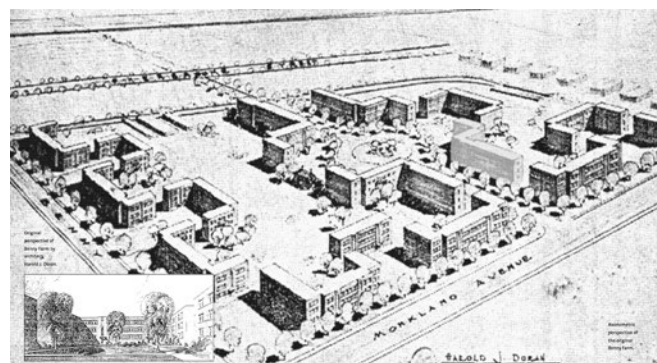


Site Plan of Benny Farm



Plan of some Units in Benny Farm

(image source: LIN, Pei-Yi. LIN, Pei-Yi (9927171). linpei.yi.tripod.com/u3/bennyfarm.html.)



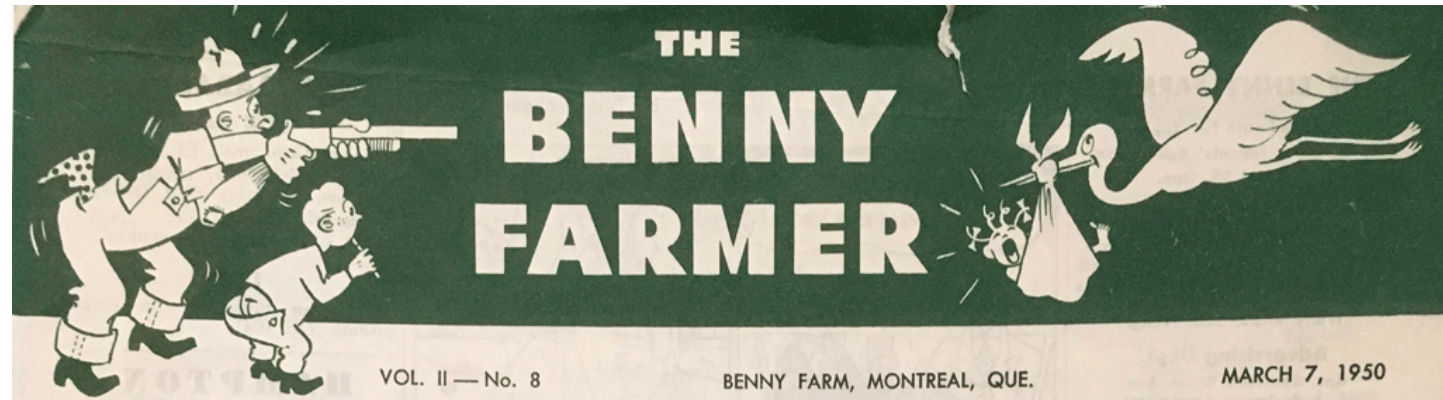
Birdeye's view of Benny Farm

(image source: Pearl, Daniel, and Daniel Wentz. Community-Inspired Housing in Canada: Benny Farm and Rosemont. Holcim Foundation, 2014.)



Perspective view of Benny Farm

(image source: Pearl, Daniel, and Daniel Wentz. Community-Inspired Housing in Canada: Benny Farm and Rosemont. Holcim Foundation, 2014.)



For a time period of over 40 years, Benny Farm has been the home to a tight-connection community of families, with people sharing similar life experience and backgrounds. There had been more than 1500 kids at Benny Farm at one time, joining and participating in the Farm's sports teams, dancing recitals, and community events, which had been captured in "The Benny Farmer," the Farm's very own newspaper.



" Nothing happened on Benny Farm without someone seeing it, our children had constant watch dogs. "
-Iris Merle Church, Benny Farm resident, Benny Farm Memory Clinic interview, April 4, 2005



Collage of Life at Benny Farm from 1950s-1980s

During a time period of more than 10 years from 1950 to 1960, there was a number of more than 1000 children growing happily in this tight-connected community and this community had also been home to families who share similar life experiences and backgrounds.

" Back in the day, there were a lot of mothers at home, there were a lot of kids. Things were split up by blocks, there were committees for sports and activities in each. "

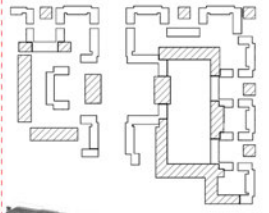
-Helen Bolton Guy, Head of Benny Farm Tenants' Association, Benny Farm Memory Clinic interview, April 4, 2005




However, by the late 1980s, there was a large proportion of aging population in the community and the average age for the residents in Benny Farm had risen to almost 70 years. It has gradually become an increasingly difficult problem for the elderly residents living in the community, with a lot of buildings vacated and left to deteriorate.

Early Development

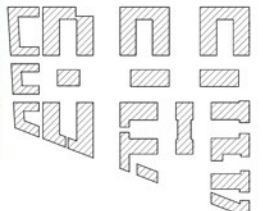
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1995 - 1997
Demolition begins, CMHC to relocate residents



"Demolition in this case would be wasteful and environmentally destructive. These buildings should continue to serve the purpose of social housing."
-Lucia Kowaluk, Coordinator of the NDG Community Council The Gazette, April 16, 1992



Benny Farm: to renovate or to demolish?

City says "no" to Benny Farm demolition
Fate of veterans' and seniors' housing complex remains uncertain

New plan on way for Benny Farm
CMHC ready to renovate

Benny Farmers demonstrate, want answers

"Many tenants desperately need better access to their apartments [...] We are getting a little tired of younger, fitter people telling us what is good for us"
-Rosemary Bradley, Benny Farm tenant, The Gazette, August 27, 1992

"We are very afraid that the master plan will change the low-density residential fabric of the neighborhood."
-Jean Martin, president of Neighbors of Benny Farm, The Gazette, June 18, 1992

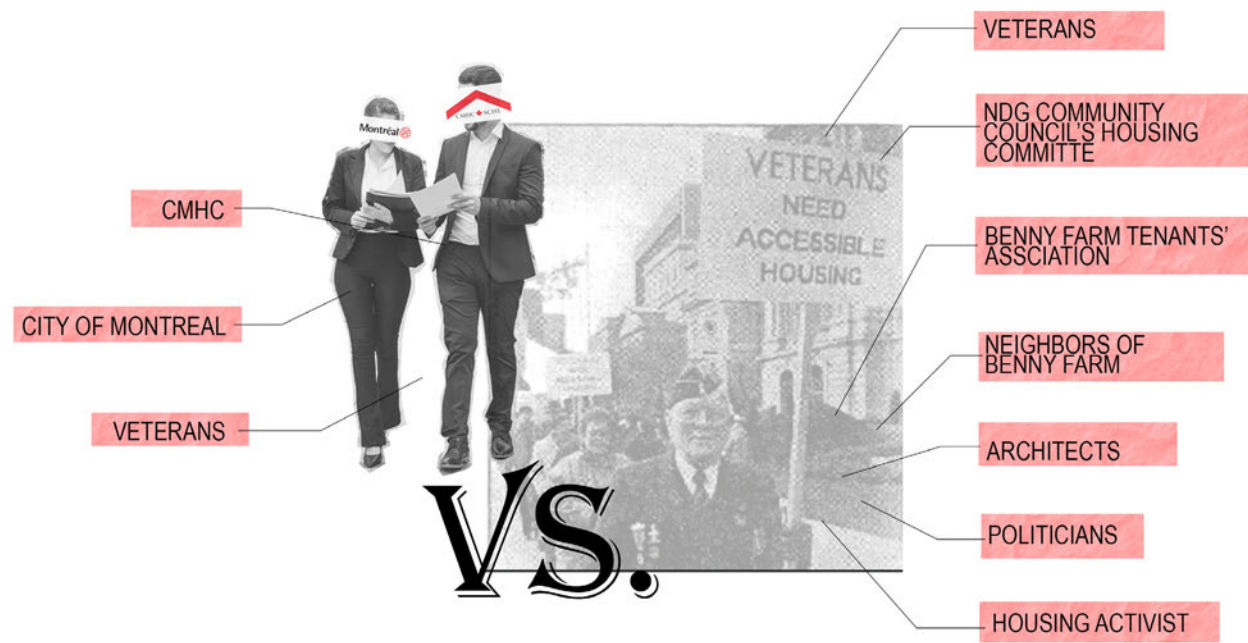
Collage of Protest on Early Development of Benny Farm

Pearl, Daniel and Wentz, Daniel. "Community-inspired housing in Canada", Lafarge Holcim Foundation, 2014, <https://src.lafargeholcim-foundation.org/dnl/4b638d42-a390-492e-bfb3-23d481dab507/CommunityHousingCanada-lowres.pdf>
"Benny Farm from the Ground Up", NDG History Workshop, <http://atelierhistoirendg.ca/>

The debate between CMHC and opposition groups reached the media.

The city was under constant pressure to develop affordable housing in Montreal because of a housing boom and many people agreed that Benny Farm would be the ideal site.

The community also wanted affordable housing to address the 2000 elderly and low-income people of the NDG neighborhood on waiting lists for affordable housing.

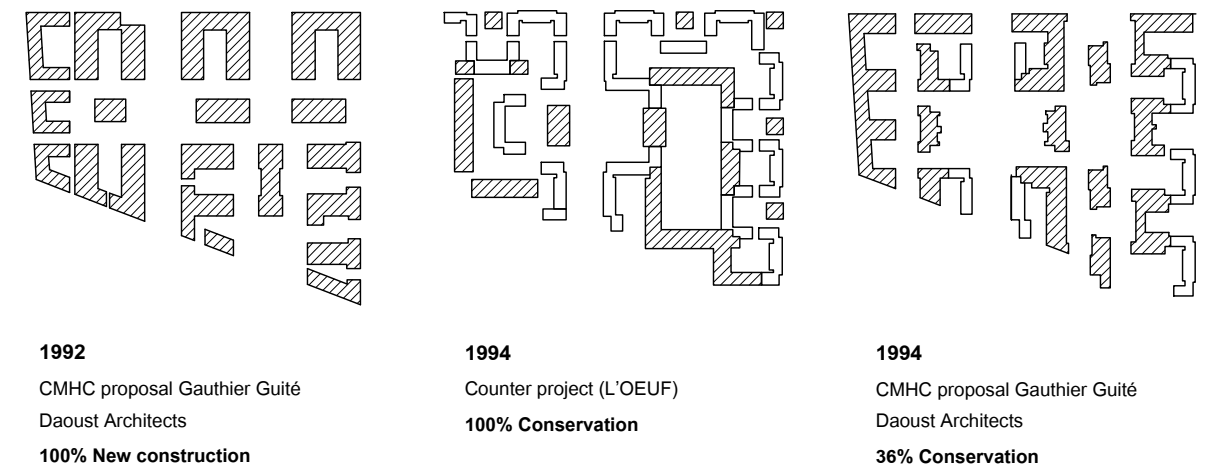


Collage of Actors

This diagram shows the actors involved in the debate following the proposition of demolition by the CMHC.

Tension was rising between a group of veteran who agreed with the proposition and the opposite group who were against it.

Many people were involved including architect, politicians and housing activists.



Redrawn Diagram of the new proposition and counter proposition

(reference: Pearl, Daniel and Wentz, Daniel. "Community-inspired housing in Canada", Lafarge Holcim Foundation, 2014, <https://src.lafargeholcim-foundation.org/dnl/466384/2-6390-4926-4f63-2364816ab507/CommunityHousingCanada-lowres.pdf>)

Redevelopment

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CMHC proposal by SBA
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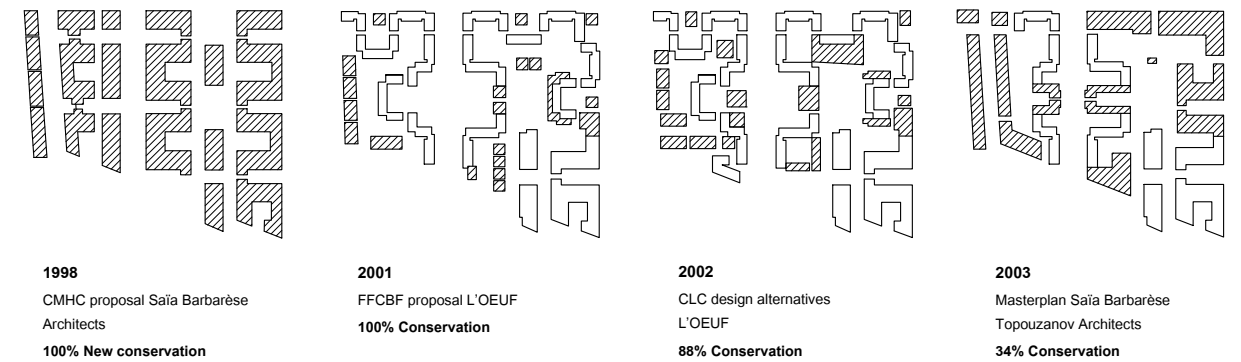
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Goals

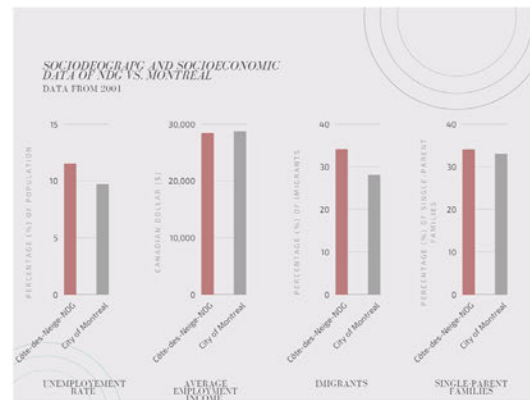
Competition Entry by Atelier BRAQ and Atelier IN SITU

(image source "Benny Farm Competition", Canadian Competition Catalogue, https://www.ccc.umontreal.ca/fiche_concours.php?lang=en&cid=125)

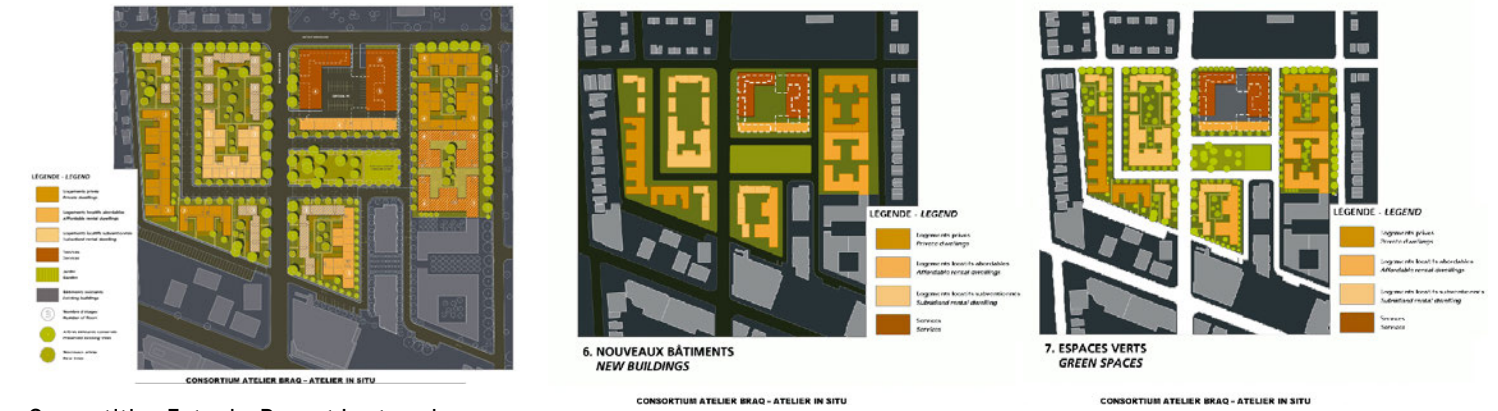


Data from 2001, City of Montreal

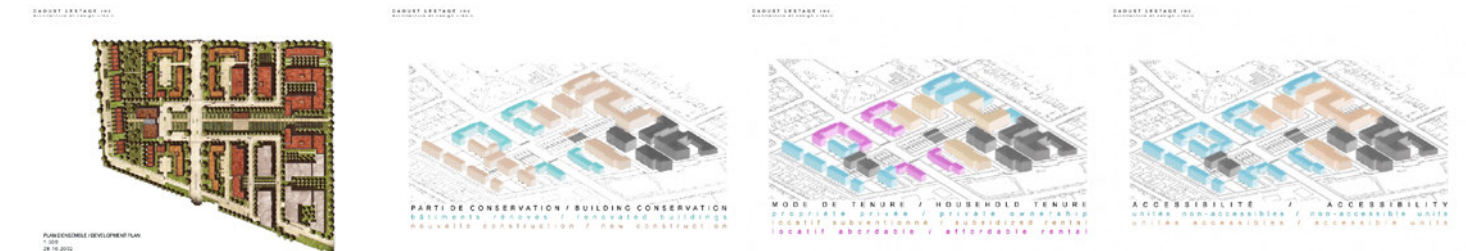
	NDG	MONTREAL
POPULATION	117 650 PEOPLE 6.5% OF MTL	1 812 720 PEOPLE
UNEMPLOYMENT RATE (%)	9.6 %	9.2 %
AVERAGE INCOME (\$)	28 387 \$	28 726 \$
AVERAGE GROSS RENT (\$)	581 \$	557 \$
TENANTS SPENDING 30%+ OF THEIR INCOME ON HOUSING COSTS (\$)	38.8 %	37.1 %
SINGLE-PARENT FAMILIES (%)	34 %	33 %
IMMIGRANTS (%)	34 %	26 %



Competition Entry by Atelier BRAQ and Atelier IN SITU



Competition Entry by Daoust Lestage inc



Competition Entry by L'Oeuf



Competition Entry by Saia Barbaresse Topouzanzov Architecture



Redrawn Montreal Map NDG With Data

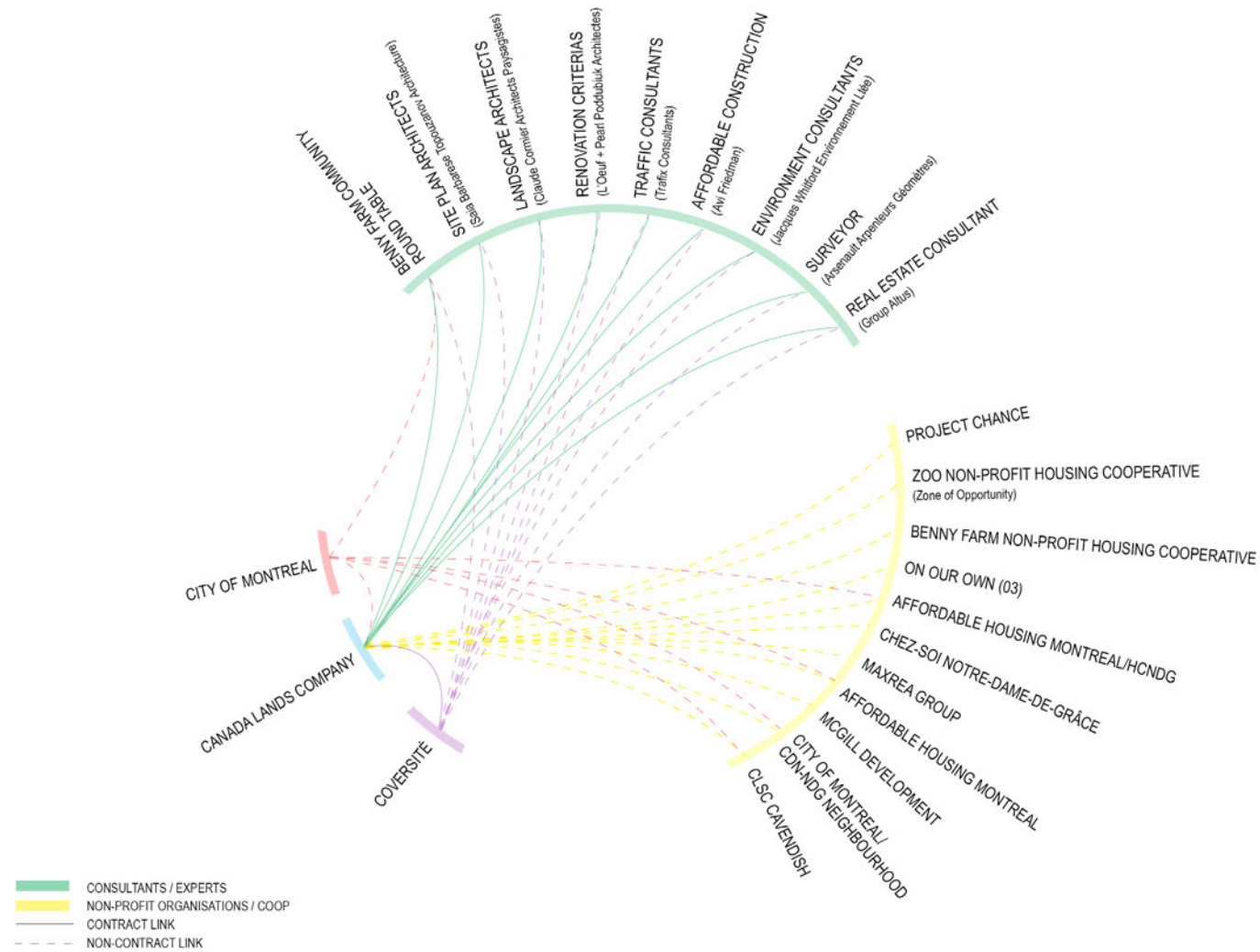
(reference: "Annuaire statistique de l'agglomération de Montréal", City of Montreal, 2007, http://ville.montreal.qc.ca/pls/portal/docs/PAGE/MTL_STATS_FR/MEDIA/DOCUMENTS/ANNUAIRE%20STATISTIQUE_SEPT07.PDF)

These socio-demographic and socio-economic data were extracted from the 2001 Statistical Yearbook of the Agglomeration of Montreal.

It shows that a great percentage of people in the Notre-Dame-de-Grace neighborhood are staying in non-affordable housing, more than the average of the city of Montreal. It also shows that the average income is lower than the average of Montreal but its rent is more expensive.

The need of affordable housing can be derived from this analysis.

Actors Diagram

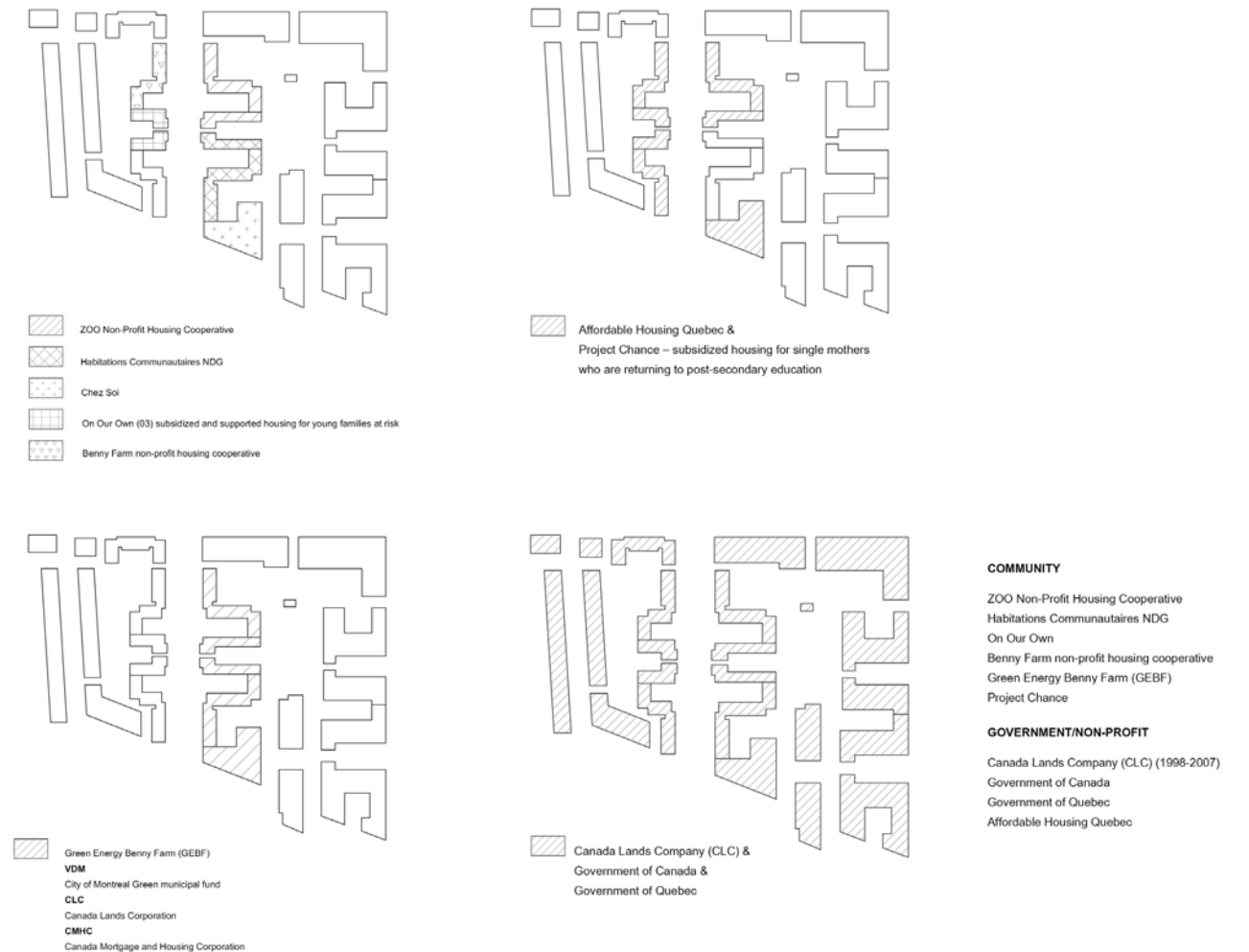


This diagram depicts the different actors involved in the redevelopment project of Benny Farm, after the land was sold from CMHC to CLC.

In green are the specialist and consultants involved such as architect, engineers etc.

In yellow are the different non-profit organization and Co-op group

Organizations



Redrawn organization diagram

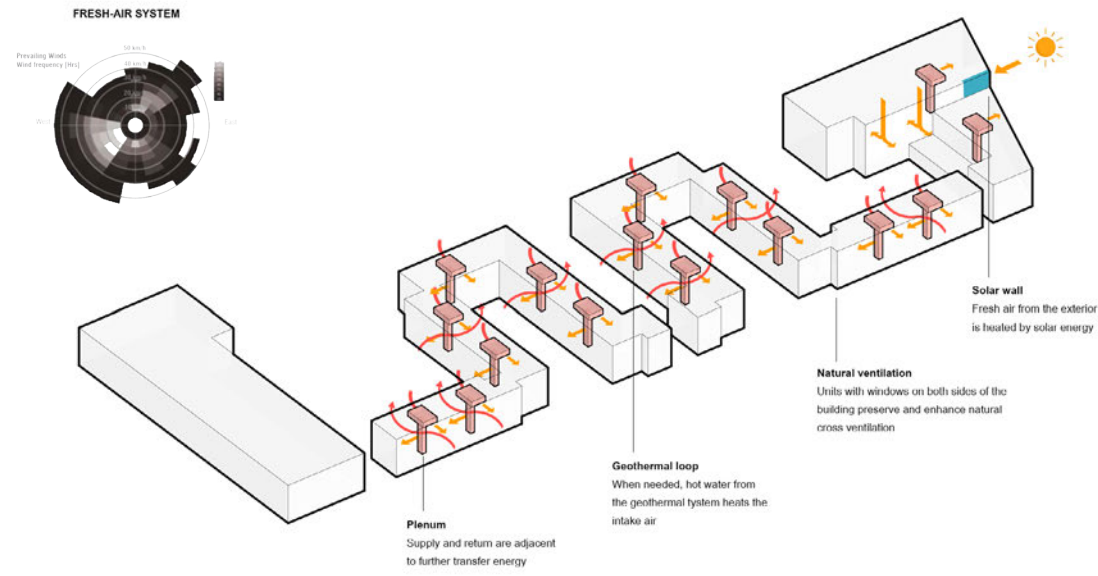
(reference: Goldie, James "Renewing Social Housing", Sustainable Heritage Case Studies, 2017, https://sustainableheritagecasesudies.ca/2017/12/08/renewing-social-housing/Sam_Donny_Benny_Farm_Montreal_ecohabitation_2013, https://www.ecohabitation.com/media/archives/sites/www.ecohabitation.com/files/page/benny_farm-dossier_de_recherche_donny_sam.pdf)

1. Coopérative d'Habitation ZOO (Zone of Opportunity): Non-Profit Housing Cooperative, build housing for young families
2. Habitations Communautaires NDG (Collaboration Société d'Habitation et de Développement de Montréal): community-housing organization, instrumental in providing affordable housing in Montreal's west end
3. Les Maisons Transitionnelles "03"- On Our Own: support young parents in difficulty in the achievement of their goals by providing them with affordable housing and opportunities for personal, educational and parental growth
4. Coopérative d'Habitation Benny Farm: Benny Farm non-profit housing cooperative
5. Green Energy Benny Farm (GEBF): non-profit, community, run utility owns and manages the energy infrastructure as well as continued re-investment in sustainable construction for this infrastructure
6. Project Chance: subsidized housing for single mothers who are returning to post-secondary education

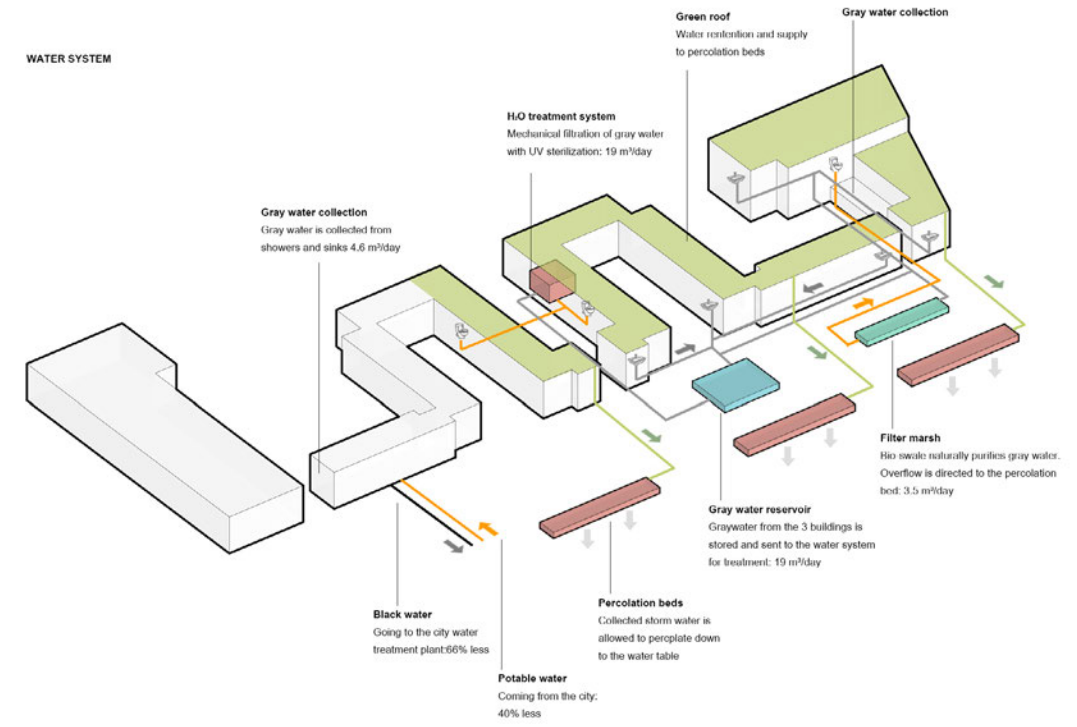
Green Energy

Redrawn green energy axonometric

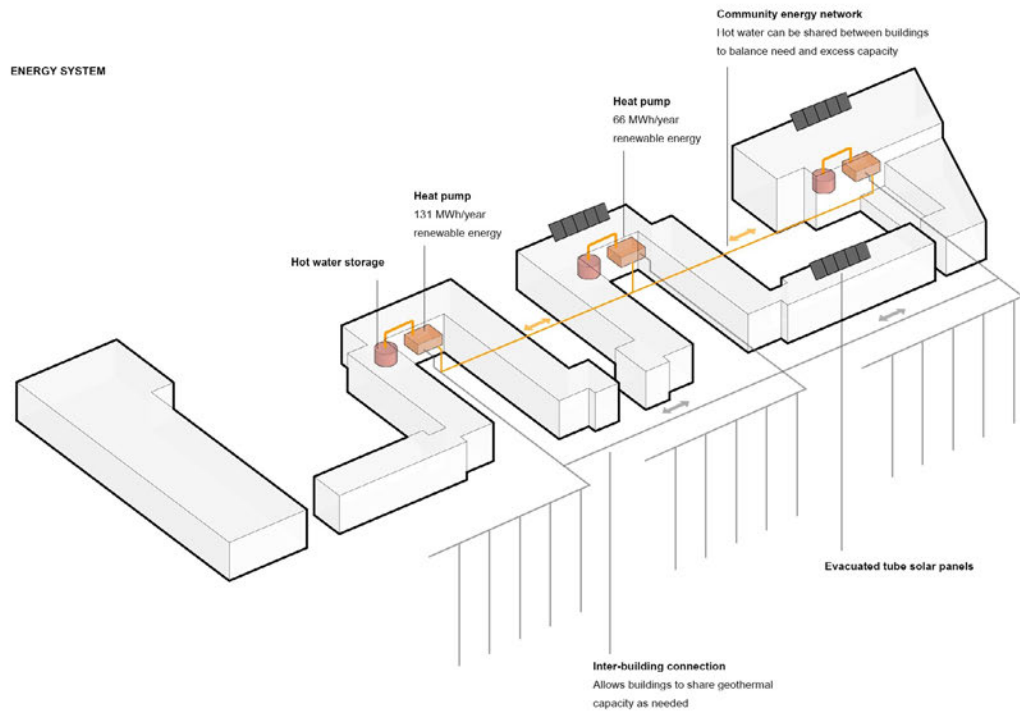
(reference: "Greening the Infrastructure at Benny Farm" <https://src.lafargeholcim-foundation.org/dni/4b38842-3390-492e-b1b3-239481da6507/CommunityHousingCanada-lowres.pdf>)



The buildings use high-efficiency fiberglass windows with operable sashes for natural ventilation, supplemented by mechanical systems that integrate supply air preheating using solar panels and exhaust air heat recovery through energy recovery ventilators.



Traditional water management indiscriminately diverts rainwater, grey water and sanitary waste to treatment facilities. This project attached great importance to water quality and adopts the method of collecting rainwater and gray water, reusing it on the site and returning to the groundwater level.



In the building, 75% of the energy doesn't depend on external infrastructure. It is generated and converted on-site by renewable resources of geothermal and solar energy, and distributed through a shared infrastructure

MATERIAL



1. Original brick temporarily tied back to wood structure with steel plates before commencing renovation



2. Destructive testing to assess condition of bricks and steel lintel and dryness of wall assembly



3. Sorting of salvaged brick from 1947 in the courtyard



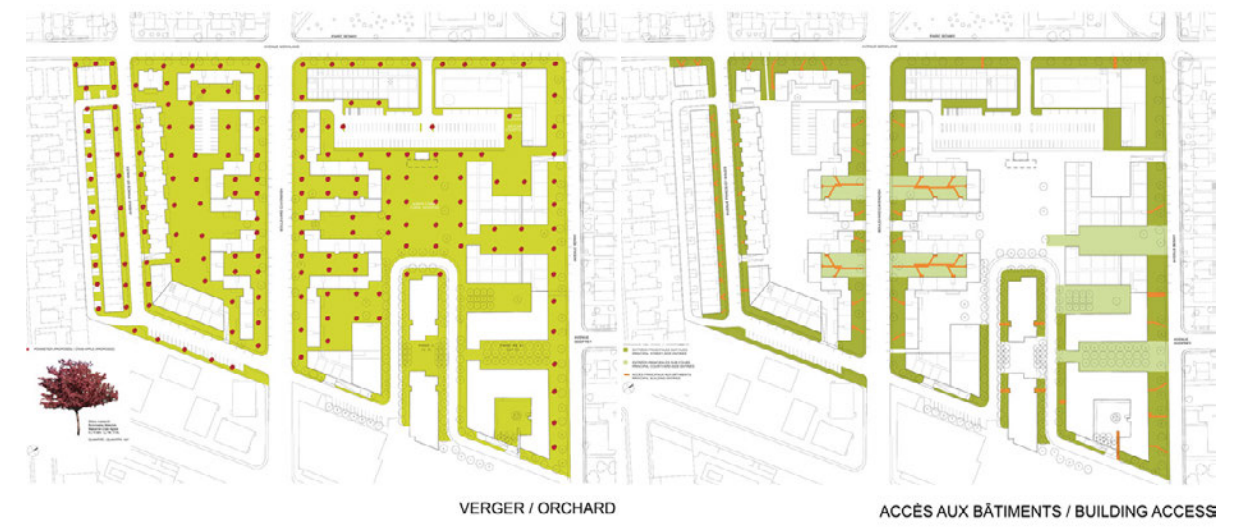
4. Fitting and grading of salvaged brick



4. Cut through original roofing to evaluate dryness and quantity of insulation

Image source: Daniel Pearl, Daniel Wentz, "Community-inspired housing in Canada", 2014 <https://src.lafargeholcim-foundation.org/dni/4b38842-3390-492e-b1b3-239481da6507/CommunityHousingCanada-lowres.pdf>

It sets a precedent for large-scale on-site masonry recycling and blurs the boundaries between old and new buildings and materials.



Site plan

(Image source: Sam, Donny "Benny Farm Montréal", ecohabitation, 2013, https://www.ecohabitation.com/media/archives/sites/www.ecohabitation.com/files/page/benny_farm-dossier_de_recherche_donny_sam.pdf)

Plans

(Image source: Sam, Donny "Benny Farm Montréal", ecohabitation, 2013, https://www.ecohabitation.com/media/archives/sites/www.ecohabitation.com/files/page/benny_farm-dossier_de_recherche_donny_sam.pdf)

Conclusion

Theoretical and Intellectual Background

Housing need in post war period

Benny Farm was built in 1947 for returning veterans of World War II, and it is the model of Canadian housing and social policy. Part of the initial development was a response to housing issues, but it also coincided with the formation of the Canadian welfare state. Many historians believe that the period was crucial to Canadian housing policy. The housing problem has always been an important part of the turmoil, which eventually led to the Winnipeg strike and the sympathy strikes across Canada in 1919. The project illustrated the evolution of ideas about neighborhood design and worker's housing that originated in the early 20th century, and also alleviated people's concerns about the social unrest after the war.

The main focus of the first period was to increase economic growth by increasing construction jobs. After World War II, there was a need for large amount of housing, provided to returning veterans, newly formed families and immigrant population.

1946 ~ 1947 - Who will build housing for veterans?

Federal Government asks private enterprise to get involved in solving veterans' housing crisis and sells the land to Housing Enterprises of Canada Limited, a consortium of insurance companies. HECL builds a series of veterans' housing complexes across Canada and among those, Benny Farm stands out as a model for post-war housing.

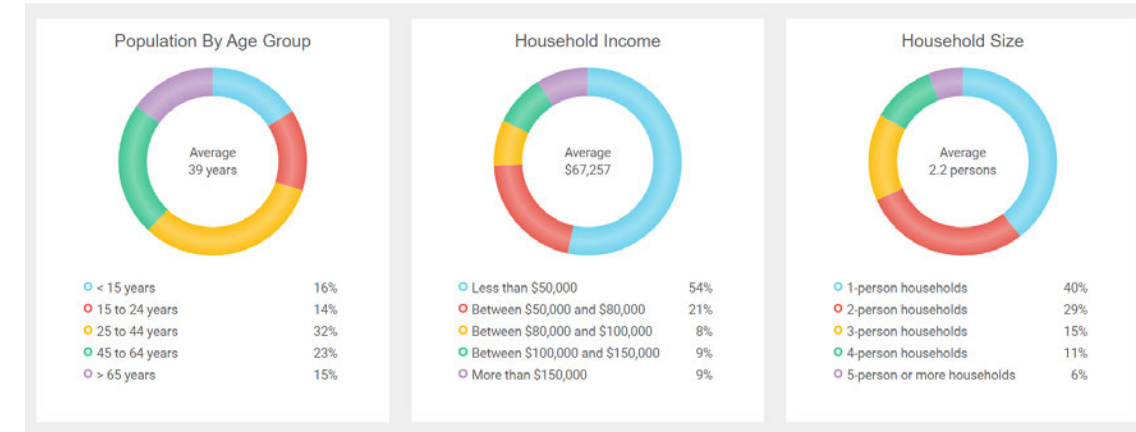
Characteristics	economic Development 1945-68	social Development 1968-78	financial Development 1978-88
Economic Conditions	reconstruction prosperity	prosperity inflation	recession recovery
Major Demographic Force	returning veterans	"baby boom" & smaller families	aging population
Overall Goals	economic development	social reform	financial restraint
Market Philosophy	filtering & infrastructure support, planned urban landscape	intervention, participation, & flexibility	reduced intervention
Housing Goals	industrial development, suburban development, physical planning	community development, income integration, demand support	supply support
Delivery Instruments	direct federal loans and grants	cost-sharing & direct subsidies, & loans	private loans, cost-shared subsidies, government delivery
Intergovernmental	federal leadership	trilevel consultation, "province-building"	provincial leadership
Outcomes	large projects "corporate city" subsidies	widespread uncontrolled devolution	administrative overlap,

Sustainable housing

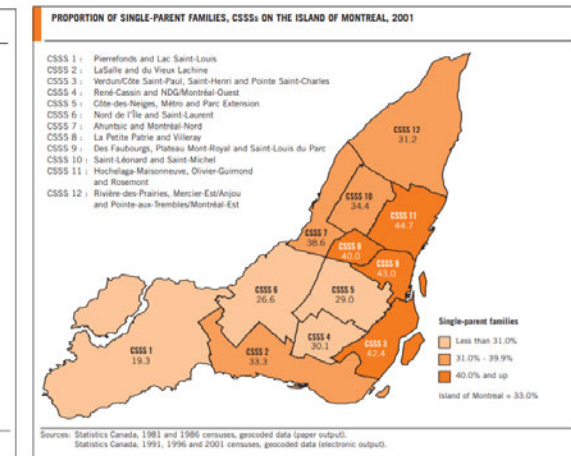
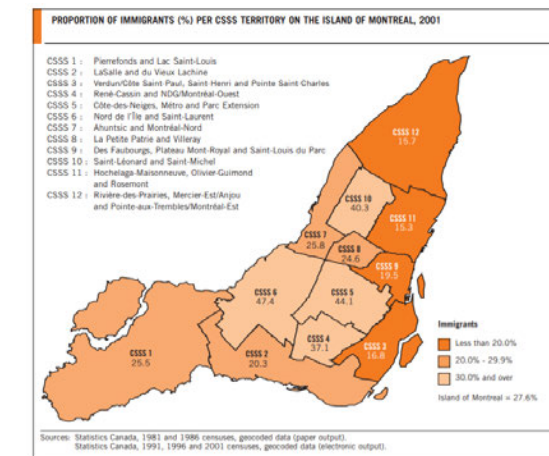
Sustainable energy was not part of the first list of objective when designing the redevelopment of Benny Farm. It came at a later stage when the stakeholders decided that Benny Farm would not only be an icon of social equity but also of environmental compatibility. The original idea of garden-city of the 1947 construction would be taken to the next level in this redevelopment. This also came from the architects vision were sustainable housing addresses not only social and economical aspects but environmental ones as well. This new objective shaped the density of the new buildings as well as the landscape throughout the site in order to attain a balance between urban density and green space. The incorporation of many green energy systems also ensued from this objective, creating a pioneer co-op group formed by the community to manage these new sustainable structures called the Green Energy Benny Farm (GEBF).

social housing

The usual purpose of social housing is to provide affordable housing. In response to the housing shortage, a large number of standardized housing has been built. The policy had confidence in the efficiency of the private market and the ability of government planners to effectively guide growth. The main feature of this stage was to provide owner-occupied housing for middle-income families. After the middle-income groups moved out, cheaper housing would be available for lower-income groups. These programs had little flexibility to regional or provincial needs.



SOCIO-DEMOGRAPHIC HIGHLIGHTS > CSSS		SOCIO-ECONOMIC HIGHLIGHTS > CSSS	
Population: 117,650 people, i.e. 6.5% of the population of the Island of Montreal		Population: 1,812,720 people	
Demographic growth forecast: 6.4% for 2001-2011, growth virtually nil for the under-15 age group, and slight drop in the 65 and over age group		Demographic growth forecast: 3.6% for 2001-2011, strong growth in the 65 and over age group, moderate growth in the 15 to 64 age group and drop in growth among the under-15 age group	
Single-parent families: 30.1% (René-Cassin: 24%, NDG/Montréal-Ouest: 34%)		Single-parent families: 33%	
Immigrants: 37% (René-Cassin: 41%, NDG/Montréal-Ouest: 34%); 8% recent immigrants*		Immigrants: 28%, and 6% recent immigrants*	
<small>* Who arrived in Canada between 1996 and 2001.</small>		Unemployment rate: 8.9% (René-Cassin: 7.7%, NDG/Montréal-Ouest: 9.6%)	
Employment-assistance claimants: 9.2% (René-Cassin: 6.9%, NDG/Montréal-Ouest: 10.6%)		Unemployment rate: 9.2%	
People living under the low-income cut-off: 25.7% (René-Cassin: 21.3%, NDG/Montréal-Ouest: 28.7%)		Employment-assistance claimants: 12.8%	
Population 20 or older without a high-school diploma: 17% (René-Cassin: 20%, NDG/Montréal-Ouest: 14.9%)		People living under the low-income cut-off: 29%	
		Population 20 or older without a high-school diploma: 26.5%	



56 Gentrification in Neighbourhoods Surrounding MUNC

VARIABLE NAME	MONTREAL CMA	MONTREAL ISLAND	SAINT-HENRI	LOWER NDG	PLATEAU
Average household income \$ - 1995 (inflation adjusted to 2005 \$)	54 131	49 583	31 338	34 637	38 705
Average household income \$ - 2005	63 038	57 738	39 340	39 413	49 295
% change, 1996-2006	16.5	16.4	25.5	13.8	27.4
Average personal income \$ 1995 (inflation adjusted to 2005 \$)	29 892	28 607	19 509	22 526	25 377
Average personal income \$ 2005	34 196	32 946	24 127	24 898	32 290
% change, 1996-2006	14.4	15.2	23.7	10.5	27.2

TABLE 14: PERCENTAGE INCREASE IN REAL INCOMES, 1995-2005

Household Incomes in current dollars, distribution by percentage

In terms of the distribution of household income by percentage, in Saint-Henri the most drastic decrease is in the proportion of households in the less than \$20 000 range, with a decrease of over 20%. The largest increase was in the \$80 000 and more range, with an almost 7% increase in the proportion of households in this range. In Lower NDG, the most dramatic decrease was in the proportion of households in the less than \$20 000 range, with a decrease of approximately 15%. There was also a decrease in the proportion of households in the \$20 000 - \$39 999 range. The largest increase was in the proportion of households in the \$80 000 + range, with a 4.8% increase.

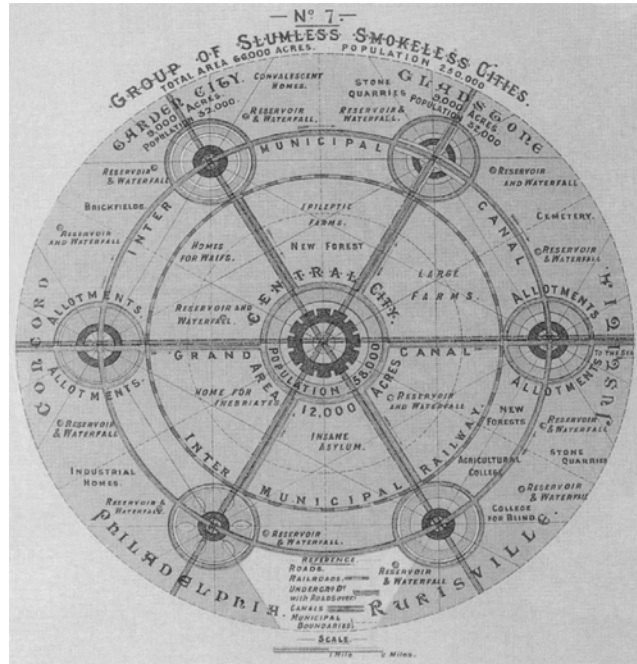
	IN CURRENT DOLLARS	LESS THAN \$20 000	\$20 000 TO \$39 999	\$40 000 TO \$59 999	\$ 60 000 TO \$ 79 999	\$ 80 000 AND MORE	N(=100%)
Saint-Henri	1995	53.9%	24.3%	12.8%	5.4%	3.6%	6 385
	2005	31.6%	30.1%	18.0%	10.0%	10.3%	7 325
Lower NDG	1995	47.5%	28.1%	14.2%	6.1%	4.1%	7 620
	2005	33.4%	31.3%	18.1%	8.3%	8.9%	8 245
Island of Montreal	1995	35.1%	27.1%	17.1%	9.5%	11.2%	773 400
	2005	23.2%	26.5%	18.7%	11.6%	20.0%	831 540

TABLE 15: HOUSEHOLD INCOMES IN CURRENT DOLLARS, DISTRIBUTION BY PERCENTAGE

Reference to specific urban theories

Garden City

The notion of garden city planning can be found as a one of the design driver of the construction of the project in 1947. This distinctive urban site promotes social interactions moments created by public-private and semi-public-semi-private spaces located across the project. The model of garden city also values the balance between density and green space to create a healthy and safe environment for its residents. This model was then keep in the redevelopment program. As Pearls states " [...] we had to understand and respect the original masterplan and landscape principles, going back to the roots of garden city planning." (37)



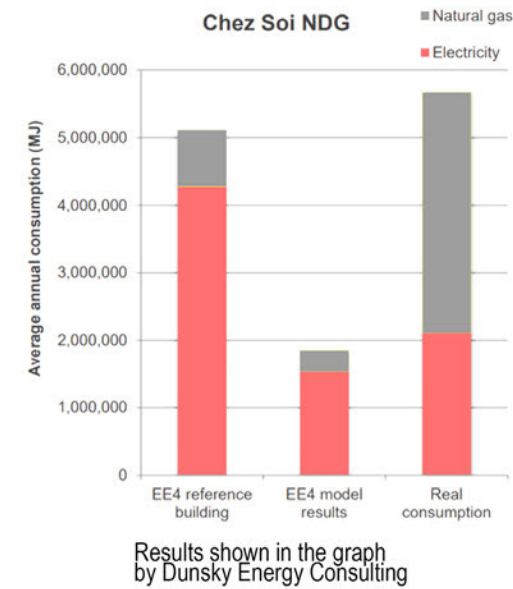
Community Living/Collective Living

neighbourhood design and worker's housing that were rooted in the early 20th century

Moisei Ginzburg and Ignatii Milinis, Narkomfin Building, Moscow, 1929



WAS IT A SUCCESS?



Harsh reality of a green plan

A BENNY FARM housing project won awards for sustainable design, but it's no prize for residents who must contend with a buildup of problems, including a failing heating system and mould

4 Sep 2007 KAZI STASTNA THE GAZETTE

Geothermal wells, which extract heat from the ground, were to be the main source of heat. But improper sealing of the pipes that connect the wells to the co-op's mechanical room resulted in the flooding of a storage locker and introduced mould.

Rooftop solar panels meant to provide energy to heat water failed because of overheating and faulty valve installation, resulting in leaks of the antifreeze mixture that circulates through the collectors.

Gas boilers that were to back up the main geothermal and solar systems broke down, leaving residents without heat or hot water.

Radiant floors designed to provide healthier, more efficient heating through a system of water-filled pipes also proved troublesome. Z.O.O. and Chez Soi have had problems balancing heat distribution, leaving some apartments overheated and others so cold they had to be provided with electric space heaters.

Mark Poddubiuk (L'Oeuf Architect)

"We're trying to do stuff that is not rocket science, but it's more sophisticated than conventional systems; yet we're working within the structures of social housing, which require us to work with the lowest bidder."

"In the low-bid process, there is absolutely no incentive for a contractor to do a good job. All that there is is (incentive) to do it for as little money as possible."

Angela Campeau (one of the first resident)

"I'm really angry the architects are winning all these awards for this project and others like it, and the work was never completed and has caused us all kinds of other problems"

Redrawn Energy Results

(reference: Hill, Alex. "Energy Efficiency in Affordable Housing", Dunsky Energy Consulting, 2013, https://www.mcgill.ca/files/2013/03/energy_efficiency_in_affordable_housing_alex_hill.pdf)
 Stastna, Kazi. "Harsh Reality of a Green Plan", Montreal Gazette, 2007, <https://www.pressreader.com/canada/montreal-gazette/20070904/28528654278910>)

The graph here, by Dunsky Energy Consulting, shows the results of energy consumption in the building Chez Soi. In reality the energy consumption exceeds largely the calculations and the return/profit is much lower than expected. Some compounding factors include the failure of Solar array, addition of cooling services, occupant behavior, etc.

"We started to get into an area of problems that we didn't really fully know. Our mechanical designer at the beginning of Benny Farm understood the theory very well, but there was a gap between the theory and the knowledge on how to build it very resiliently"

"Another gap was that the industry couldn't respond to the design criteria within a reasonable cost."

RESIDENTS OF NDG BUILDING SAY THERE'S BEEN NO HEAT, HOT WATER FOR WEEKS

No heat or hot water: Single mothers in 'unlivable' conditions in NDG subsidized housing

Benny Farm connaît de sérieux ratés

"It's non-livable. We have kids, and it's not okay for us to be living like this,"

"In the case of heating, the harmonization of the traditional system and the green system has exacerbated the existing problems."

Daniel Pearl (L'Oeuf Architect)

Natalie Robinson (resident for the past 3 years)

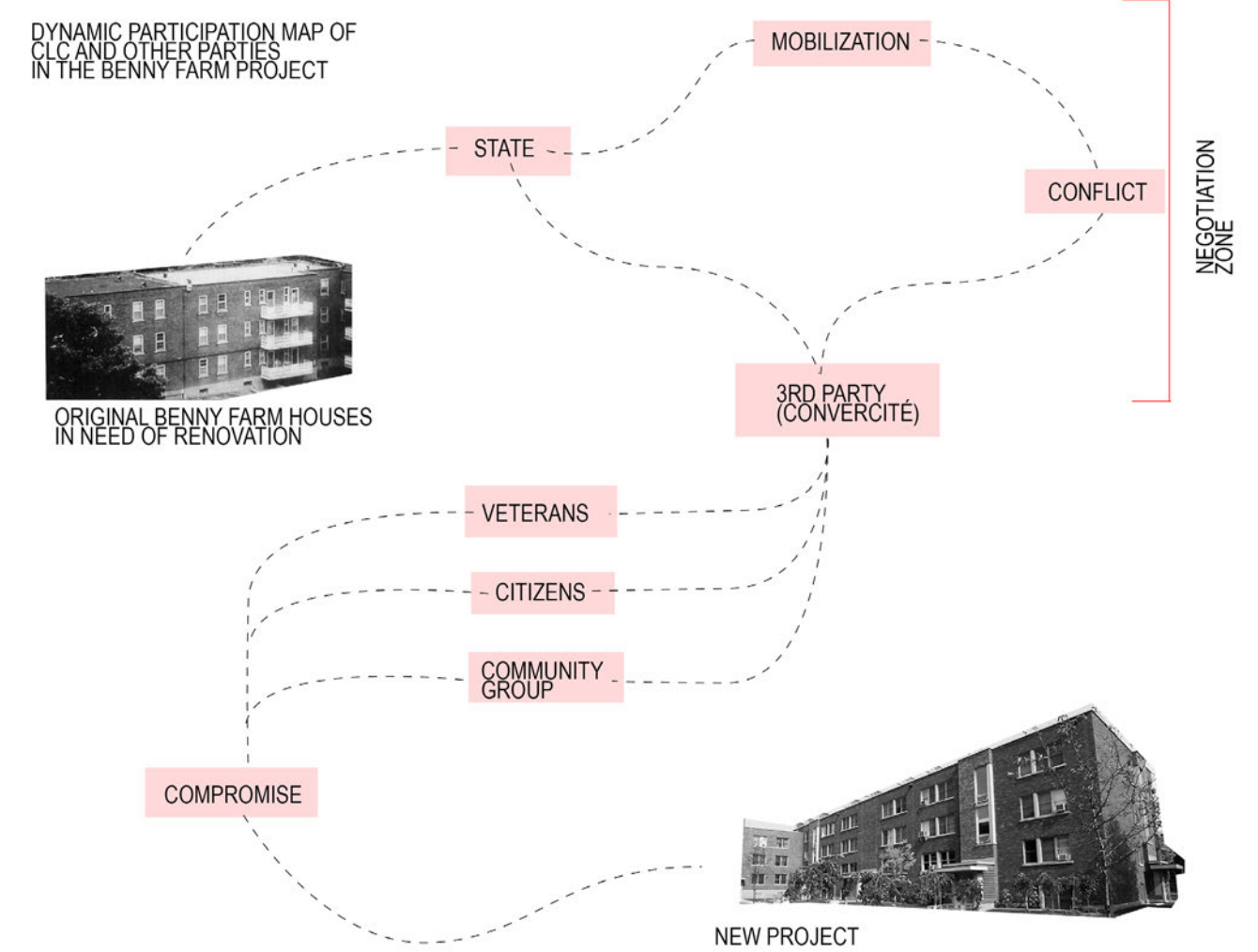
Patricia Lowe (City of Montreal Representant)

Newspaper Headlines

(reference: Hill, Alex. "Energy Efficiency in Affordable Housing", Densky Energy Consulting, 2012, https://www.mcgill.ca/tesed/files/tesed/energy_efficiency_in_affordable_housing_alex_hill.pdf
 Stastna, Kazi. "Harsh Reality of a Green Plan", Montreal Gazette, 2007, https://www.pressreader.com/canada/montreal-gazette/20070904/2915705427880
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 Greig, Kelly. "No heat or hot water: Single mothers in 'unlivable' conditions in NDG subsidized housing", CTV Montreal, 2019, https://montreal.ctvnews.ca/no-heat-or-hot-water-single-mothers-in-unlivable-conditions-in-ndg-subsidized-housing-1.4247899
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The problem lies in the construction of sophisticated systems in the context of social housing. As Mark Poddubiuk, architect at L'Oeuf, mentions in Montreal Gazette in 2007, "In the low-bid process, there is absolutely no incentive for a contractor to do a good job. All that there is is (incentive) to do it for as little money as possible." and his colleague Daniel Pearl, "Another gap was that the industry couldn't respond to the design criteria within a reasonable cost."

These low quality installation of complex systems then created many issues such as loss of heat and condensation resulting in mold. The residents often have no choice but to look for other affordable housing and leave Benny Farm.



Participation Dynamic

(reference: Riel-Salvatore, Gabriel. "La Gouvernance Locale: Le Cas Benny Farm à Montréal." Canadian Journal of Urban Research, vol. 15, no. 1, 2006, pp. 41-61. JSTOR, www.jstor.org/stable/26192421. Accessed 12 Oct. 2020.)

This diagram illustrate the success of a dynamic participation and negotiation between state and people through a neutral third party, in this case Convercité. This group played a major role in mediating between both parties and to assure a good compromise between everyone.

One of Benny Farm's success is this model of the state opting for a mixed management based on the local knowledge of the NDG community to direct the conflicts generated by the project into a dynamic of exchange and negotiation focused on conflict resolution.

Influence on other Projects



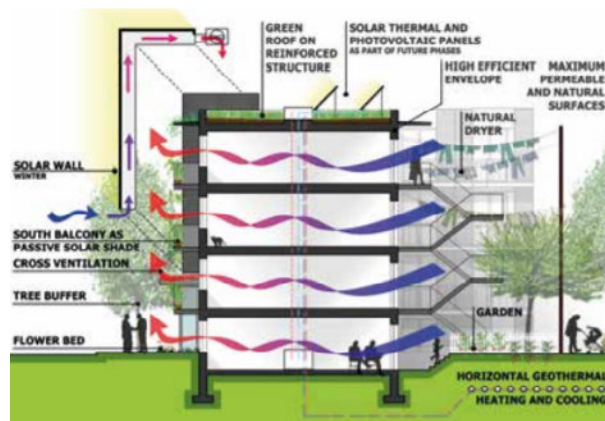
Rosemont is L'Oeuf's second large urban social housing project. Its design naturally relates closely with the Benny Farm project. It targets similar social and environmental problems with the common goal of proving better ways of design social housing.

As Daniel Pearl says in Community Housing Canada: "Looking at Benny Farm as a new model, understanding it as a pilot project, understanding that the theory of the project and the reality didn't line up, and how the theory changed practice in Montreal, and how from there, even if we didn't build what we wanted, we designed and learned so much, we started to transfer those ideas to other projects, including Rosemont."

Similar sustainable energy systems are incorporated in Rosemont such as green roof, solar panels, solar wall, geothermal system and high efficiency envelope.

The client also chose a site configuration of buildings surrounding a central courtyard of green space resembling the garden city planning of Benny Farm.

Finally a strong community in the Rosemont project echoes the strong sense of community that was present in the Benny Farm project.

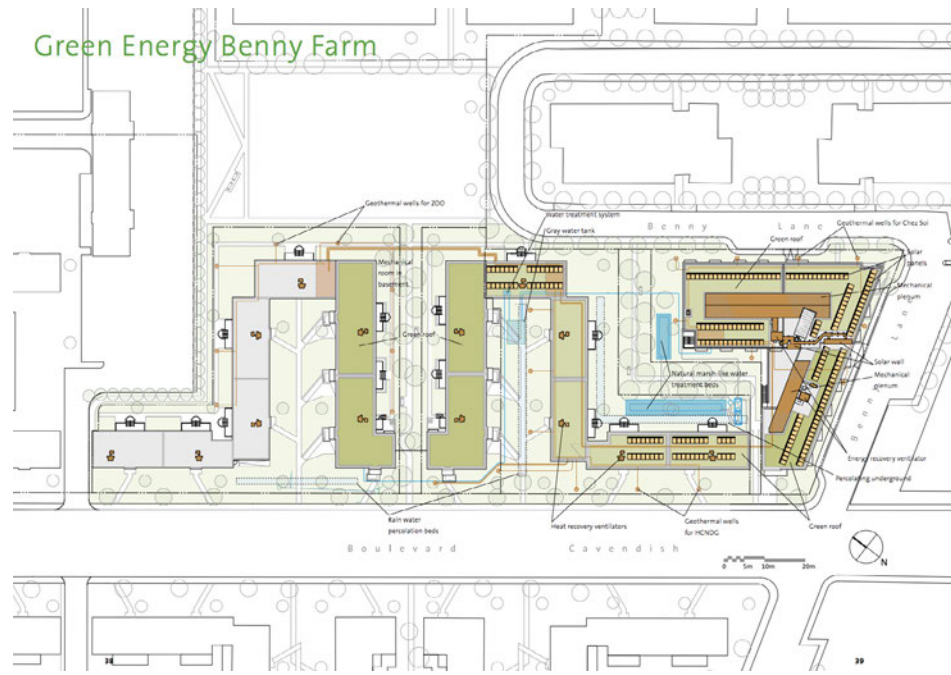


Schematic building section showing various ecological design strategies.



Assessment

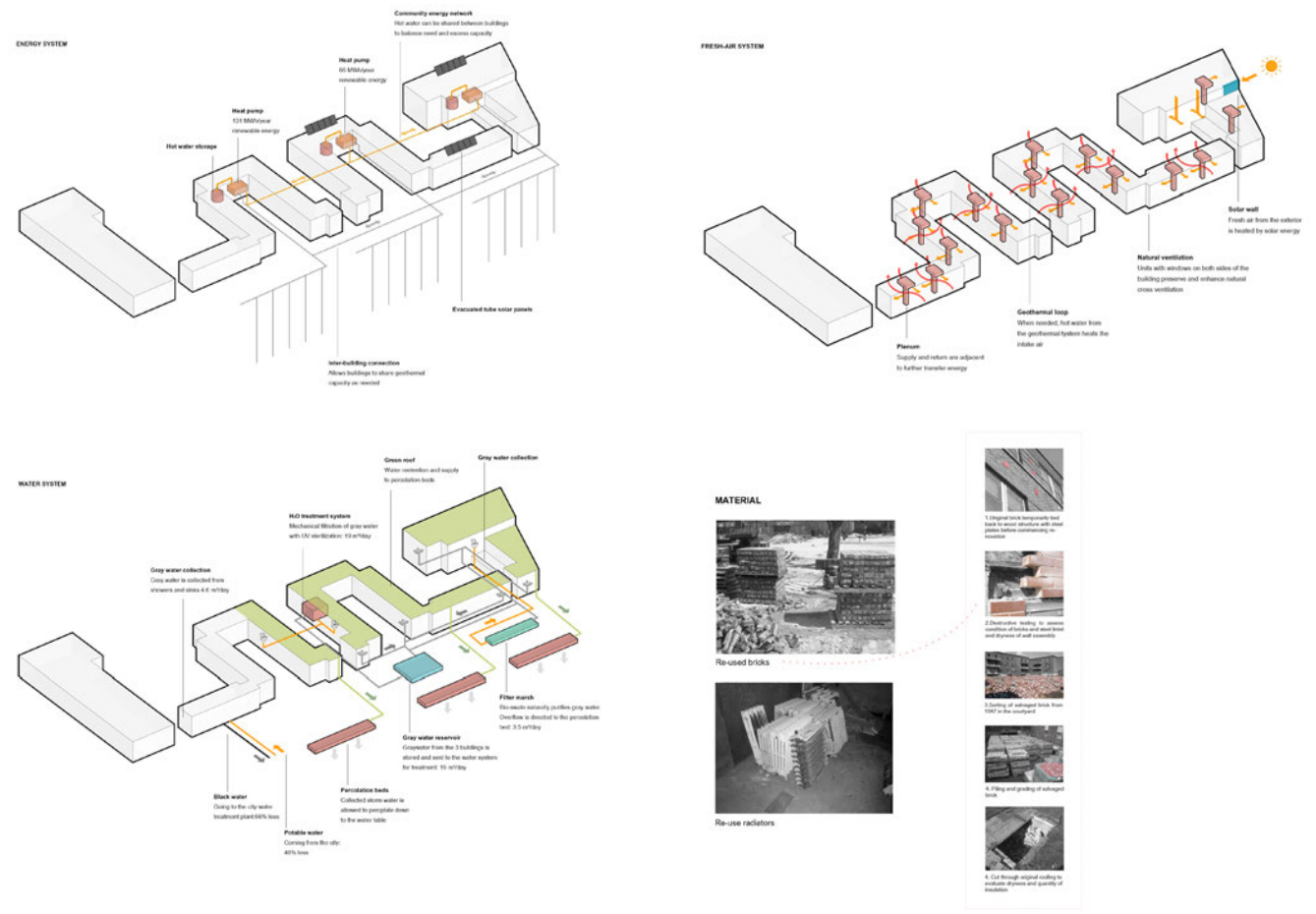
Green Energy Benny Farm



Green Energy on Benny Farm

(Image source: Pearl, Daniel and Wentz, Daniel. "Community-inspired housing in Canada", Lafarge Holcim Foundation, 2014, <https://src.lafargeholcim-foundation.org/dsl/4ba38642-a390-492e-bf03-236481da5577/CommunityHousingCanada-lowres.pdf>)

Benny Farm is an excellent example of social housing project addressing climate change by incorporating multiple green energy technologies such as geothermal wells, solar panels, green roofs and water retention systems among many other strategies. One of the major aspect of this sustainable strategy during the construction phase was to recycle the bricks from the demolition of the original houses reducing the waste produced. A high focused was also placed on the envelopes of each building to be designed as very durable and highly efficient in terms of insulation to avoid the premature degradation of the building and reduce the need of energy for heating. Geothermal systems and solar panels and a solar wall were built and installed to provide clean energy throughout the site while green roofs reduces urban heat island. Finally grey water/rainwater treatment were incorporated to reduce water waste and use within the Benny Farm project. Benny Farm's designers had a great vision for the project but the complexity of many of the sustainable systems ended up creating more problems. Nonetheless its innovation established a change in attitude toward a wider adoption of sustainable approaches in buildings.



Redrawn green energy axonometric

(reference: "Greening the Infrastructure at Benny Farm" https://src.lafargeholcim-foundation.org/dsl/e188849-6781-4925-8824-99a79e27337/NA05_FHZQM_small.pdf)



Nowadays Lifestyle In Benny Farm

The Benny Farm project redevelopment project also addresses the problem of social inequality in the city of Montreal. With approximately 570 units of affordable housing built on site in new and rehabilitated buildings, Benny Farm have provided opportunities for rental and housing ownership for people who can not afford normal market prices including seniors, young mothers, low- and moderate-income families, as well as co-ops and people with special needs.

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https://src.lafargeholcim-foundation.org/dnl/e1d884a9-e78f-4925-882d-99a79e2731d7/NA05_FHZOM_small.pdf"Benny Farm Competition", Canadian Competition Catalogue, https://www.ccc.umontreal.ca/fiche_concours.php?lang=en&cld=125