

OCCUPANT SATISFACTION WITH NARROW-FRONT STARTER HOMES IN MONTREAL

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Abstract

Escalating land costs in recent years have raised the price of market homes beyond the means of the average first-time home buyer. While smaller units, higher densities, and locations from the city center offer a way to provide affordable housing, these units often tend to compromise certain common perceptions of living comfort, privacy, and independence generally associated with home ownership. Following the construction of 1000 14-foot wide row-housing units in and around Montreal, a survey was conducted to determine the degree to which the units were able to accommodate the buyers' functional requirements and personal expectations. Also investigated were the tradeoffs made by the occupants, willingly or for lack of choice, with respect to the occupants' former dwellings. The units were found to be an improvement for the majority of occupants in most of the attributes tested, and satisfaction levels were generally high. There was a strong willingness from the buyers to accept smaller homes, higher densities, and suburban locations, provided certain aspects of building quality and territorial definition were maintained.

Introduction

There is little argument about the fact that the North American housing market is currently experiencing a shortage in affordable housing, particularly for young first-time buyers. While explanations for the problem have focused partially on macroeconomic factors, the rising cost of land has considerably affected the affordability of homes. Between 1949 and 1982, the percentage of total house costs attributed to land rose from 11 percent to 24 percent, and this percentage continues to grow (U.S. League of Savings Institute, 1983). The implications for providing affordable homes in this context are that smaller units, higher densities, and locations further from the city center, where land is cheaper, are required.

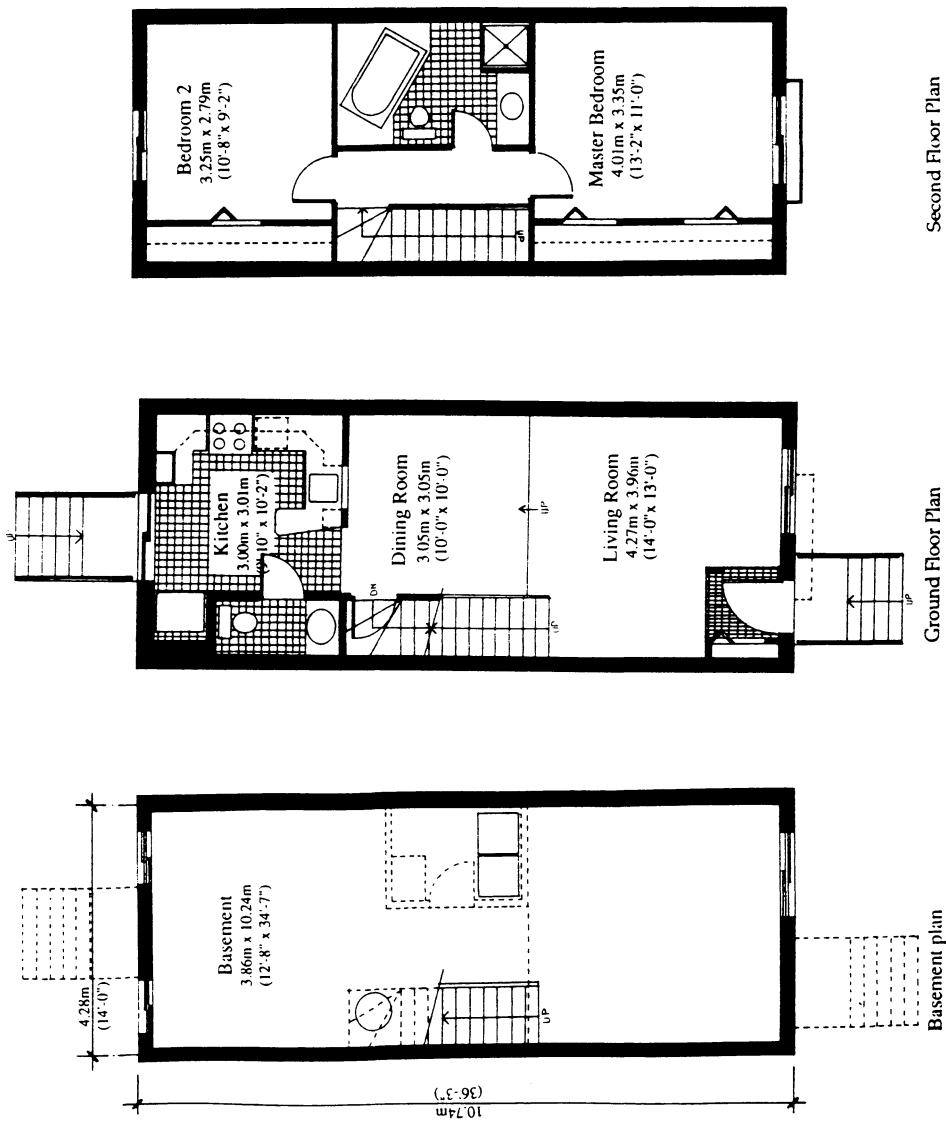
The narrow-front rowhouse has the potential to address these requirements more effectively than other housing forms because of its efficient use of land and infrastructure. Its inherent spatial limitations, however, tend to compromise some of the more traditional perceptions of living comfort, privacy, and independence commonly associated with home ownership. Consequently, the question arises as to the potential for this type of housing to fulfill the functional requirements and personal aspirations of the average first-time buyer.

A recent development in Montreal provided an opportunity to examine the adequacy of the narrow-front rowhouse in responding to these occupant needs (Friedman & Cammalleri, 1992b). Between February 1991 and June 1992, approximately 1000 rowhouses measuring only 14 feet wide were built and sold in 25 projects in and around Montreal. The projects were inspired by a prototype home which was developed in the McGill University Affordable Homes Program. The Grow Home, as it was called, is a 1000-square foot rowhouse with a living room, kitchen and bathroom on the main floor (Rybczynski et al., 1990). In an effort to reduce costs, an unpartitioned second floor was proposed which could eventually be finished at the owners' discretion to include two bedrooms and a second bathroom.

A demonstration unit was erected for a period of four weeks at a cost of \$36,000 Canadian. After construction, information on the home was made available to any builder interested in implementing the concept. The projects were delivered by small local builders, most of whom had no previous experience in affordable housing. All the units were built with fully

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Figure 1. Typical modified floor plans (as built).



finished upper floors, basements and brick exteriors (Figure 1). Selling prices, including land and infrastructure, ranged from \$69,000 to \$95,000 (sales tax not included).

The experience was valuable for several reasons. First, it was representative of the industry's ability to deliver affordable housing under its own workings, with little or no direct intervention from community groups or social agencies aimed at promoting affordable or social housing. All of the projects were designed, built, marketed and sold entirely by independent builders working competitively in a free market. Although provincial and municipal governments were offering home buyers reduced tax incentives for the first five years of ownership, the units were, for all intents and purposes, delivered under the traditional workings of the homebuilding industry.

Secondly, the projects provided an alternative for apartment dwellers who had previously been unable to purchase a home. The vast majority of the buyers (86.6 percent) were formerly tenants, 80.6 percent had lived in apartments, and 89.4 percent were first-time buyers. The households were made up mainly of young couples (25-34 years of age) with one child. The single-person household accounted for 16.5 percent of the cases, and single-parent families for another 9.8 percent. Most of the households (63.3 percent) had annual incomes below \$50,000 Canadian (Table 1).

Thirdly, the projects were interesting in that there was evidence the homes were not purchased solely for the purpose of ownership. In all of the cases studied, municipal restrictions would not permit 14-foot land subdivisions. Consequently, the units were built in groups of three, four, or seven and sold as condominiums (with collective ownership of the land). Condominium apartments in the same price range or lower were available in the vicinity of most of the projects, and were the only other option affordable to this group of buyers. It appears that the townhouse was not selected just for the purpose of ownership, but for its inherent qualities.

Table 1. Household characteristics (by percentage of respondents).

HOUSEHOLD SIZE	(%)	OCCUPANT AGE	(%)
One person	16.0	0-17	22.1
Two persons	40.7	18-24	12.8
Three persons	32.0	25 to 34	43.7
Four persons	7.2	35 to 44	15.2
Five persons	3.1	45-54	4.0
Six persons	1.0	Over 55	2.1
HOUSEHOLD TYPE	(%)	HOUSEHOLD INCOME	(%)
One adult	16.5	Below \$20,000	1.6
Two or more adults	3.6	\$20,000 to \$29,999	5.5
Single parent	9.8	\$30,000 to \$39,999	25.1
Couple	32.5	\$40,000 to \$49,999	30.1
Couple with children	37.6	Over \$50,000	37.7
EMPLOYMENT STATUS	(%)	NUMBER OF INCOME EARNERS	(%)
Self-employed	9.5	One-income household	36.7
Full-time	69.6	Two income household	58.7
Part-time	10.8		
Unemployed	6.3	OCCUPATION	(%)
Full-time student	0.6	Farming, fishing, forestry, logging, mining and quarrying occupations	0.3
Retired	0.6	Laborer	3.2
Other	2.5	Semi-skilled	5.7
EDUCATION	(%)	Skilled tradesman	18.1
Primary school	1.7	Sales, service, clerical	36.5
Secondary school	35.7	Professional	11.1
CEGEP	20.8	Managerial or administrative	15.6
University*	30.4	Homemaker	3.5
Trade School	11.4	Other	6.0

*Includes occupants with some university schooling

n=196

Finally, the circumstances surrounding the purchase of the homes were unusual. The shopping patterns that emerged were characterized by short, impulsive decisions, often taken without having seen the finished product. The majority of the buyers (59.9 percent) were not actively looking for a house at the time of purchase, and seem to have come across the projects by chance. Close to one third (29.4 percent) of the buyers visited only one project, and 61.3 percent visited no other project after having seen the one in which they purchased a unit. Furthermore, 39.3 percent of them decided to buy the unit immediately, and another 44.9 percent decided within two weeks. The vast majority of respondents (77.4 percent) purchased the house without having seen a model unit.

While the lack of thorough search has been found to be a major characteristic of search behavior, the brevity of search and high rate of sales displayed in the Grow Home-type projects remains unusual. In a similar study conducted in the Toronto area, Barrett (1976) found that once the decision to buy was made, prospective home buyers engaged in only a brief and casual survey of alternative houses. In a sample of 380 homebuyers, 13.7 percent visited only one house, and 28.7 percent visited two to four houses. Only 7.1 percent did not search, while 40.5 percent spent less than one month searching. There was no correlation between the intensity of search behavior and socioeconomic characteristics of the home buyers.

When buyers were probed on the reasons for purchasing the home, price received the highest rating, with 40.0 percent of respondents reporting price to be an attractive feature (in an open-ended question), and 89.7 percent rating price as "extremely important" in their decision to purchase. The rapid rate of sales, coupled with the importance of selling price reported by the buyers, indicated the projects filled a market void. In fact, housing data acquired in 1990 and published in *Strategic Plan, 1992-1996* by CMHC indicates that 79 percent of renters between the ages of twenty and forty-four did not have the means to buy a starter home in Montreal. Furthermore, only 9 percent of the available housing supply was affordable to this group. Considering that similarly-priced condominium apartments in the vicinity of the projects were available, these responses suggest the projects provided buyers with the first option to home ownership which was not only affordable, but also acceptable.

Because the units represented one of a limited number of options to home ownership for this group, there was a question as to whether these units were able to accommodate buyers' functional requirements and personal preferences and aspirations, or if the quick sales were simply due to the buyers' lack of choice in low-rise affordable market housing. An occupant survey was conducted to evaluate resident satisfaction with several aspects of the projects, and to determine whether or not there were any tradeoffs made willingly, or for lack of choice with respect to their former dwelling (Friedman and Cammalleri, 1992a). Ultimately, the goal was to determine the limitations of the 14-foot rowhouse configuration in fulfilling the buyers' needs, and to arrive at some indication, however preliminary, of the quality of living environment that can be generated from this form of housing.

Housing Quality and Occupant Satisfaction

The degree to which the built environment is able to respond to the buyers' housing needs is inevitably dependent on the level of resident satisfaction with the new surroundings --an appropriate and widely accepted standard for the measure of housing quality. Fried and Gleicher (1961) were among the first to suggest that residents' satisfaction might be a more appropriate criterion for evaluating the quality of housing than observed physical characteristics such as structure and plumbing. The potential for any housing solution to achieve overall satisfaction, however, is not limited to the housing product itself.

Housing, neighborhood, and community satisfaction have been found to be positively related to each other (Campbell, 1981), and comprehensive models for evaluating resident satisfaction have suggested that global sets of attributes need to be considered. Onibokun (1974), for instance, has defined the relative habitability of housing for public tenants in terms of four interacting subsystems: the tenant subsystem, the dwelling subsystem, the environment subsystem, and the management subsystem. Hempel (1976) has included measures in his model to account for the general searching experience when purchasing a

house. The importance of previous location and social environment has also been emphasized as a determinant of satisfaction (Fried and Gleicher, 1961) as well as occupant demographic characteristics. Certain types of households (younger, married, female heads) were consistently found to express less satisfaction from any given context due to different needs, aspirations and/or abilities to alter context (Galster & Hesser, 1981). Higher occupant satisfaction levels were also correlated to home ownership and single-family dwellings (Rent & Rent, 1978).

While the effect of demographic, psychological, and sociological factors on overall housing satisfaction has been substantiated, the dwelling unit itself is the dominant factor, followed by the immediate surroundings (neighborhood). A 1987 study by Gruber and Shelton supports the notion that house and neighborhood should be distinguished as separate "realms" within the residential environment. The results of their study suggests neighborhood evaluation aspects are unrelated to housing satisfaction, and of the three realms (house, neighborhood, and community), house is the most important.

Rent and Rent (1978) indicated that the moderate strength of the relationship between neighborhood, unit, and residential satisfaction provided statistical justification for the logical need for treating the first two of these concepts independently. Ha and Weber (1991) also concluded housing quality is the most influential function of housing satisfaction. Similarly, Wiedemann et al. (1982) found that apartment evaluation (including items related to the amount of comfort, space, and economic value) was the second most important predictor of residential satisfaction, next to perceptions of attractiveness, policing, and suitability of recreation for grade schoolers. More specifically, a study by Baillie (1990) found that dwelling features (storage, room size, etc.) were more highly correlated with satisfaction than with household or dwelling characteristics (tenure, type, etc.) in female-headed, single-parent households.

Considering that the dwelling unit itself (and the resulting site plan) is a primary determinant of overall occupant satisfaction with the housing situation, the potential for narrow-front rowhousing developments to address the affordability challenge depends, to a great extent, on the ability of the smaller, narrower unit to accommodate the buyers requirements.

Methodology

The study was intended to assess the occupants' initial reactions to their new physical surroundings and to provide immediate feedback to the projects' builders, architects and planners in the form of practical recommendations. Due to the short residency periods that were anticipated, aspects of the project dealing with social interaction and community participation would not have had time to develop adequately and, as such, were not investigated in any detail. A preliminary assessment of the occupants' overall satisfaction, however, was acquired through two general questions which asked how well the occupants' expectations had been fulfilled and whether or not they would recommend their purchase to a friend.

The likelihood of occupant satisfaction levels changing considerably in the near future is uncertain, since there have been findings to argue both sides of the question (Baillie, 1990; Rent & Rent, 1978). It was felt that assessing occupants' first reactions would lead to a more accurate evaluation of how their new dwelling compared to their former one. Follow-up evaluations are being planned to monitor any changes in opinion, and to complete a longitudinal study aimed at assessing the potential for narrow-front rowhousing developments to provide quality affordable housing in the long term.

Seven of the projects were selected based on location, advanced level of completion, and consistency in unit design. All of the 236 households in these projects were visited and the owners were asked to complete a ten-page questionnaire. A total of 196 questionnaires were completed (a response rate of 83 percent), with thirty-eight households declining to participate and two households that could not be reached despite repeated visits. Information from the builders was gathered through general discussion and structured interviews. Project documentation in the form of site plans, working drawings, and cost breakdowns was made available by the builders.

The occupants were asked to list what features were desired in a home, to rate their preferences, and to indicate how the features compared to their former dwelling. Satisfaction was evaluated for twenty-three attributes; five related to location, seven to the site plan, and eleven to the house itself. The same was done for each of ten spaces in the house, including both individual rooms and circulation spaces. In both cases, the responses were rated on a scale of one to five, with one being very disappointed (or much worse than former dwelling) and five being very satisfied (or much better than former dwelling). Averages were calculated for the individual characteristics and each set of attributes. Emphasis was placed on anticipated problem areas, such as commuting times and methods, parking layout, and privacy.

The tradeoffs made by the buyers were assessed with respect to their former dwelling and their preferences and aspirations at the time of purchase. Those aspects which were ranked high in priority and which represented either a deterioration in living conditions or unfulfilled expectations were considered to be tradeoffs. When accompanied by high satisfaction ratings, they were assumed to be made willingly for the sake of home ownership.

Findings

Buyers' Preferences and Aspirations

The findings reflect a strong desire from the buyers to live in a suburban setting in a new, single-family detached dwelling (Table 2). The majority of respondents (51.8 percent) rated the suburb as their most preferred location (regardless of price), and the single-family detached dwelling received the highest rating from 78 percent of respondents. Approximate-

Table 2. Buyers' preferences and desired features.

PREFERRED NUMBER OF BEDROOMS ¹		IMPORTANCE OF LOCATION CHARACTERISTICS ³		%					
	(%)		1	2	3	4	5		
One bedroom	0.5	Proximity to:							
Two bedrooms	54.6	Work	5.2	2.6	17.7	27.6	46.9		
Three bedrooms	43.8	Public Transportation	23.3	5.8	12.1	20.1	38.6		
Four bedrooms	0.5	Medical Services	14.2	17.4	32.1	22.1	14.2		
More than four bedrooms	0.5	Shopping facilities	15.3	13.8	39.7	18.5	12.7		
		Schools	31.1	12.6	11.5	19.7	25.1		
SPECIFICALLY LOOKING FOR NEWLY BUILT HOUSE ¹		IMPORTANT FEATURES DESIRED IN A NEW HOME ²		PREFERRED LOCATION ⁴					
	(%)			1	2	3	4	5	
	58.5	Second/big bathroom	7.7	City Center	77.6	13.1	2.2	4.4	2.7
		Sufficient storage	6.7	Ten min. from city center	11.8	35.8	18.7	13.4	20.3
		Natural lighting	6.4	Suburb	3.7	3.7	19.8	20.9	51.9
		Basement	5.8	Small Town	7.2	14.4	27.6	41.4	9.4
		Garage	4.3	Country	23.9	17.9	21.2	14.2	22.8
		Second/big bedrooms	4.0						
		Open plan	4.0						
		Sufficient amt. of total space	3.7	PREFERRED TYPE OF DWELLING ⁵		%			
		Functional kitchen	3.7		1	2	3	4	
		Two stories	3.7	Single-family detached	12.3	5.3	4.3	78.1	
		Private parking	3.4	Semi-detached	11.1	22.1	63.5	3.3	
		Quality of interior finishes	3.1	Townhouse	4.6	56.8	24.4	14.2	
		Good location/neighborhood	3.2	Condominium apartment	77.0	10.4	6.3	6.3	

¹ Based on percentage of respondents

² Most frequently mentioned attributes; percentage based on 327 entries

³ Percentage of respondents; scale of 1 (not important at all) to 5 (extremely important)

⁴ Percentage of respondents; scale of 1 (least preferred) to 5 (most preferred)

⁵ Percentage of respondents; scale of 1 (least preferred) to 4 (most preferred)

n=196

ly 58 percent of the buyers were specifically looking for a newly built house, and 54.6 percent wanted two bedrooms.

Although 68.9 percent of the respondents indicated the desire for a particular feature, the types of features mentioned were random and covered a range of fifty-eight items. The items mentioned most frequently were the desire to have a second and/or large bathroom (15.8 percent of respondents), and a large and/or private backyard (12.8 percent of respondents). Sufficient storage, natural lighting and a basement were also considered to be relatively important.

Proximity to work was rated as being the most important location characteristic, with 46.9 percent of the respondents rating it as "extremely important," followed by proximity to public transportation, which received top rating from 37.8 percent of respondents. The majority of respondents felt that their proximity to schools, medical services and shopping facilities was of little concern.

Satisfaction

The majority of the occupants were satisfied with all of the location characteristics and with six of the seven site attributes (Table 3). The project's general image was the highest source of satisfaction among the site attributes in five of the projects surveyed, with 32.6 percent of the respondents reporting being "very satisfied," and another 49.5 percent "satisfied." Sense of community and child safety were ranked second and third respectively. The only attribute found to be a source of considerable disappointment was the size of the backyard areas, where 41.7 percent to 64.5 percent of respondents from five of the seven projects reported being dissatisfied.

The unit characteristics, particularly the interior spaces of the dwelling, were clearly the most satisfying features. The majority of respondents from all seven projects were satisfied with all of the eleven unit attributes listed. A substantial fraction reported they were "very satisfied" with seven aspects in particular: interior appearance (38.5 percent), exterior appearance (31.2 percent), quality of exterior finishes (30.3 percent), total amount of space (32.2

Table 3. Occupant satisfaction and comparison to former dwelling.

LOCATION	SAT ¹	COMP ²	SITE	SAT ¹	COMP ²
Proximity to:			General image	4.042	3.876
Work	3.736	2.851	Sense of community	3.792	3.665
Public Transportation	3.615	2.892	Safety of children	3.785	3.739
Medical Services	3.718	3.138	Location of parking	3.540	3.584
Shopping facilities	3.766	3.196	Size of front yard	3.346	3.577
Schools	3.766	3.196	Size of backyard	2.937	3.553
LOCATION	<u>3.697</u>		Level of privacy	3.219	3.483
			SITE	<u>3.513</u>	
UNIT			INTERIOR SPACES		
Overall design/layout	4.152	3.949	Entrance	3.236	3.243
Total amount of space	4.169	3.778	Living room	3.844	3.489
Amount of storage space	3.952	3.808	Dining room	4.060	3.648
Flexibility of space	3.689	3.630	Kitchen	3.926	3.598
Exterior appearance	4.193	3.862	Ground-floor bathroom	4.178	3.827
Interior appearance	4.218	3.938	Master bedroom	4.487	3.823
Quality of exterior finishes	4.069	3.740	Second bedroom	4.373	3.755
Quality of interior finishes	4.193	3.483	Upper-floor bathroom	4.418	4.076
Amount of natural lighting	4.098	3.542	Hallway	4.126	3.660
Amount of cross-ventilation	4.038	3.652	Stairs	4.254	4.000
Soundproofing between units	3.500	3.657	INTERIOR SPACES	<u>4.092</u>	
UNIT	<u>3.933</u>				

¹ Average score on a scale of 1 (very disappointed) to 5 (very satisfied)

² Average score on a scale of 1 (much worse than former dwelling) to 5 (much better than former dwelling)

n = 196

percent), overall design/layout (28.3 percent), amount of natural light (40.2 percent), and amount of crossventilation (30.2 percent). The percentage of respondents expressing satisfaction with these attributes ranged from 79.9 percent for amount of natural light to 90.2 percent for both overall design/layout and total amount of space. The weakest sources of satisfaction with the units were the quality of interior finishes and soundproofing between units, which received a satisfactory rating from 49.7 percent and 62.4 percent of respondents, respectively.

Of the interior spaces, the most successful were those which were found on the second floor. The master bedroom was the highest source of satisfaction for the majority of the occupants, with 57.7 percent reporting to be "very satisfied" and another 37.0 percent "satisfied." The bathroom and second bedroom were satisfactory to 92.1 percent and 93.5 percent of the respondents, respectively. The units' entrance area was the only interior space which did not elicit high levels of satisfaction, with 29.7 percent of respondents expressing disappointment. About 88 percent of respondents found that their general experience with their new house was about the same or better than what they expected, and the vast majority of the buyers (91.7 percent) reported that they would recommend their purchase to a friend.

Comparison to Former Dwelling

Location Characteristics. The widespread satisfaction with aspects of location was not reflected in the improvement ratings (Table 3). Those characteristics which noted improvement were not rated as important in the evaluation of buyers' preferences. Marginal improvements over previous dwellings were recorded in two characteristics (proximity to schools and medical services) while deterioration was reported in the remaining three. The greatest compromise was the occupants' distance from work, which is quite meaningful considering this was ranked first in importance among the buyers' preferences. Public transportation, which ranked second in importance, was the second highest source of compromise, with 35 percent of respondents rating it as being either worse or much worse than their former dwelling. While these are likely to improve as the municipal infrastructure develops, the occupants' distance from their work place may pose a problem.

Site Plan Characteristics. When compared to the occupants' former dwelling, all aspects of the site plan were considered to be an improvement. Those items which respondents most frequently rated as being satisfactory tended to be those which demonstrated the most improvement over their former dwelling. General image, sense of community, and safety of children consistently scored highest both in terms of satisfaction and improvement. Backyard size and privacy level showed the weakest improvement and lowest satisfaction levels.

Unit Characteristics. The unit characteristics and interior spaces were also the highest source of improvement over the occupants' former dwelling. Interior and exterior appearances were rated among the top three sources of both improvement and satisfaction, while the quality of interior finishes offered the weakest improvement over the former dwelling and had the lowest level of satisfaction.

Discussion

Project Location

The fact that the projects were built in areas away from the city center was not found to be critical in accommodating the buyers' needs. The high preference rating assigned to the suburb indicates that the implementation of projects off the island of Montreal was not a tradeoff. It appears that access to services that are not part of a daily routine, such as medical services and shopping facilities, bear little importance to the majority of occupants. With 96.4 percent of the households owning a car and 44.1 percent owning two cars, access to these services does not seem to be a critical issue. Proximity to schools may not have been considered important due to the presence of school bus service. The distance from work, however, represents an important compromise for most of the occupants.

Transportation to and from work was examined in more detail. The study found there was a general increase in the occupants' car use as a primary mode of transportation, and in their commuting time. The number of respondents with commuting time of under thirty minutes was reduced by 15.9 percent. Most of these (13.9 percent) increased their commuting time from fifteen minutes or less at their previous dwelling. Similar compromises were found in the way the respondents got to work, with a 7.7 percent increase in car usage, 3.5 percent decrease in public transit, and a 4.1 percent decrease in walking. Given the very high priority assigned to proximity to work, the equally high level of compromise that was demonstrated in this regard, and the reasonable degree of expressed satisfaction, it appears that, for the most part, there was a strong willingness from the buyers to give up proximity to work for the purpose of home ownership. The negative implications of moving to locations further from work, such as increased commuting costs, lost time, and harm to the environment (due to increased car usage) were either not considered or of little consequence in the occupants' purchasing decision.

Site Plan

The inverse situation occurred with some attributes related to the site plan, where high levels of improvement were accompanied by relatively low levels of satisfaction. In this case, the results indicate tradeoffs that were made unwillingly and, as such, are representative of the occupants' basic expectations from home ownership.

Occupant satisfaction with the size of backyards, front yards, and privacy, for instance, was consistently lower than it was with the other attributes, although all of these represented an improvement over the occupants' former dwelling. Occupants who were least satisfied with the size of their backyard tended to be those who were least satisfied with the level of privacy. Furthermore, those projects that received the lowest satisfaction rating for general image were those that had the smallest yards.

The apparent difficulty that was experienced in accommodating parking requirements in most projects resulted in reduced yard space and, in some cases, excessive paving. Furthermore, the fact that the units were sold as condominiums implied there were no legal boundaries to define the occupants' property limits. The issue of private outdoor space, both for leisure and parking, was therefore of interest and was examined further. The occupants were asked whether or not they were experiencing any problems in sharing this yard space with their neighbors and, if so, what type of problems were posed. Only 18.4 percent of respondents answered they were experiencing problems. The most prominent problem with the backyard area, according to the respondents, was the lack of privacy and disagreements on types, sizes, and locations of fences.

The problem of acoustic privacy was also examined by evaluating sound transmission through the common walls. Although the vast majority (73.7 percent) of respondents reported being able to hear their neighbors, only 1.4 percent felt the noise was always disturbing, and 8.5 percent found it often disturbing. Only 10.1 percent of respondents heard their neighbors very often, and 70 percent answered they almost never heard them. The apparent tendency to accept hearing the neighbors occasionally is probably due to the majority of the occupants' background. With over 80 percent of the respondents coming from apartments, the level of acoustic privacy represented an improvement over former living conditions.

Because there was no evidence of lack of acoustic privacy being a major disturbance, it can be assumed that the cause of lower satisfaction with privacy is due to the inadequate backyard area. Furthermore, because the level of conflict between the neighbors was also reportedly low, it can be concluded that the designs of the site plans were a significant cause of the problem. Given the high level of importance that was attributed to having a backyard space and the widespread disappointment with the resulting product, the project's inability to provide an adequate backyard area was found to be the single most significant source of failure in the projects.

Dwelling Units

The units themselves accommodated most of the buyers' preferences by providing new construction, a second large bathroom, and two finished bedrooms, with the possibility of

adding a third with the unfinished basement. The only substantial source of compromise appears to have been with the preferred dwelling type, since 4.5 percent of respondents rated the townhouse as "least preferred," and another 56.8 percent rated it second to last.

There was no evidence of compromise being made with any of the unit attributes, nor with the interior spaces, which represented an improvement in most cases and elicited high levels of satisfaction. The fact that 80 percent of the buyers came from apartments may have enhanced the unit's attractiveness. With two floors of living space (which could be extended into the basement), a separate private entrance at ground level, and the provision of private outdoor spaces for leisure and parking, the small size and narrow configuration of the units did not limit their ability to accommodate any of the buyers' expressed needs or functional requirements.

Conclusion

Generally, those aspects which represented the highest improvement over the occupants' former dwelling had a tendency to elicit the highest levels of satisfaction, supporting the notion that the occupants' satisfaction with their current dwelling is related to their former housing situation. Difficulties in site planning, presumably arising out of the narrow width of the units, and possibly out of regulatory obstacles, led to substandard yard spaces and parking arrangements in some of the projects. Satisfaction levels with most of the site attributes, however, were high, particularly with the projects' general image, sense of community, and safety of children. The units' exterior appearance was also one of the highest sources of satisfaction among all attributes, and a large majority of occupants indicated positive sentiments towards their housing situation in general. These tendencies are in line with the findings of previous studies (Gruber and Shelton, 1987; Wiedemann et al., 1982) which indicate that occupant satisfaction with the neighborhood "realm" appears to be more aesthetic than substantive, based on perceptions of attractiveness, friendliness, and safety.

A willingness of the occupants to compromise some of their preferences was evident, particularly in matters relating to location and housing type. There was a tendency for the buyers to compromise on their strong preferences for single-family detached units and to travel longer distances to and from work for the sake of ownership. The townhouse, with its separate entrance at ground level and private yard space, appears to satisfy some of the traditional perceptions of a house, and was generally accepted as such. The tendency to accept tradeoffs, however, drops significantly when any of the traditional elements of home ownership are compromised. This became evident with the relatively high levels of disappointment expressed with the size of the backyard area, which compromise some more absolute expectations in terms of territory and privacy. These observations are supported by the findings of a post-occupancy evaluation by Kantrowitz and Nordhaus (1980), where territoriality, site security, and private outdoor space were the most consistent issues arising out of the analysis of site design. The lack of adequate yard space in some cases may have also reduced the perceived distance between neighbors, a notion which has been correlated with lower levels of neighborhood satisfaction (Lansing and Marans, 1969).

Judging by the levels of occupant satisfaction for location, site, and unit characteristics, it can be concluded that most of the functional requirements and aesthetic preferences of the buyers were fulfilled, with the sole exception of the backyard area. There was no other evidence of the unit's 14-foot width compromising any of the occupants' expressed desired features. Three other aspects of the projects, although generally rated as satisfactory, may require improvement: the general level of privacy in the project, both visual and aural, the quality of interior finish, and the design of the entrance area.

Given the respondents' high concern for the quality of materials, expressed desire for large bathrooms and bedrooms, and their general satisfaction with the small size of the units, it is evident that investing in quality and luxury was more important than investing in larger units. Although the quality of interior finishes was not substantially inferior to local industry standards, the relatively low levels of satisfaction expressed in this regard reflect a certain level of expectation from the home owners. While the reasons for such preferences are not clear, it has been suggested that occupants in lower socioeconomic groups aspire to amen-

ities which upper classes take for granted (see Rent and Rent, 1978; Cutler, 1947). The need to address these demands in the design and development of alternative affordable housing solutions cannot be ignored.

Because of the specificity of the sample, regional and cultural preferences, and economic conditions surrounding the projects, it would be difficult to predict how these levels of satisfaction would compare with those in larger, more conventionally built homes. With average overall satisfaction ratings of 4.092 for interior spaces and 3.933 for unit characteristics, however, it would be difficult to conceive of this group being significantly less satisfied than occupants of other types of units. Provided the site planning deficiencies can be addressed, there appears to be a significant potential for the narrow-front rowhouse to address the affordability challenge successfully. Solutions for adequate site planning of narrow-front rowhousing developments have been drafted, and recommendations in this regard are being put forward to the builders.

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