

## Research Note:

# THE REACTION OF CONSUMERS TO LOW-INCOME DWELLINGS - TWO CASE STUDIES FROM JAMAICA

Andrea Francis and Vincent George

### Abstract

*Housing for low-income households in Jamaica is developed by the National Housing Trust and utilizes developments, or schemes, of various housing types. Surveys were conducted in two developments with a sample of household heads and spouses. This paper examines the responses of consumers to differently designed studio units in two low-income housing developments in Jamaica. Each of the schemes was characterised by high levels of customer dissatisfaction. Particular problem areas were in the design and construction of the units. Problems with privacy due to unit layout and lack of insulation were evident.*

### Introduction

According to Heron (1994), “the first clear policy towards squatters in Jamaica was implemented by the Central Housing Authority in 1937... The CHA, acting under the 1939 [Slum Clearance] law, cleared squatter areas ... and erected new houses” (p. 23). Since that time, an impressive number of low-income units have been built, using a variety of strategies - detached units, row houses, high-rise buildings, starter homes, sites, and services. A number of wall materials and construction methods have been employed, including wood, block and steel, and prefabricated panels. Particularly in recent times, when prices have increased significantly, units have become smaller, with some variation in the organization of internal living space. Yet, over the years, there has been a dearth of formal research on the response of occupants or potential purchas-

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Andrea Francis, MBA, is Director, Planning Research, at the National Housing Trust, Jamaica. Vincent George, Ph.D., is Senior Director, Corporate Services, at the National Housing Trust, Jamaica.

ers, with the result that the design of units has usually been undertaken by architects largely uninformed by the clients' views.

The views of residents are important. Low-income persons require utility from their dwellings, just as higher income persons do, -good quality workmanship, privacy, an absence of a need for repairs in the short- to medium- term, convenience in terms of the internal arrangement of space and in the location of such minor facilities as electrical sockets and bathrooms. Low-income clients may have useful and workable ideas about how their living spaces can be designed to maximise this utility.

In relative terms, low-income housing in the formal market is very expensive.<sup>1</sup> Some low-income households pay as high as 50% of their income on loan repayments and, invariably, have to make great sacrifices for security of tenure. Research carried out in 1992 in a low-income rural housing development in Jamaica (Smith, 1995) found that residents suffered significant contractions in their household's disposable income and had to make large sacrifices in savings and the amount spent on clothing, entertainment, and medical care. Households such as these cannot modify their units in the short term. Therefore, because the quality of the housing should be the best that their money can buy, residents should be consulted for their views.

This note examines the responses of occupants in two housing schemes (developments) in Jamaica. The developments were financed by public sector agencies and, through a combination of procedures, selected occupants were predominantly low-income persons. Both developments were comprised of studio units. While the major reason for the use of this unit type may have been the low cost, studio units also were justifiable, on the sociological ground that incremental building, sometimes stretching across two or more generations, is how the average low-income Jamaican family has 'always' housed itself.

The analysis focuses on problems identified by the occupants and indicates that a number of these problems were avoidable. This paper hopes to contribute to filling the gap in the research on occupant response to housing units by using case studies to make the point that consulting the potential beneficiaries of low-income housing can assist architects and builders working in this sector.

### **Previous Work**

There is little research in Jamaica on how consumers respond to their housing. The emphasis has been on issues related to financing, building systems, and sociology. The little research on consumer response that has been done generally has been conducted on behalf of agencies who will construct low-income housing developments. This research usually takes the form of a few pre-emptive questions on market survey questionnaires about the type of unit respondents feel should be constructed for low-income clientele, or in which they themselves might be interested. Typical examples of these questions are found in a 1999 survey questionnaire prepared for the National Housing Trust: Which of the following types of unit do you think the NHT should build for persons wanting to live on Spanish Town Road [an Inner city area]? The next question

asked if the respondent would want to live in the area. The recommendations from these surveys are usually 'hidden' in institution-specific reports.

Another kind of research that deals with consumer response implicitly focuses on the cosmetic and structural changes made by occupants to units after they move in, as observed by Masters (1999):

Owners in NHT schemes [developments], especially owners of studio units, quickly add rooms but virtually all owners engage in non-structural cosmetic changes soon after occupation. The most frequent alterations are painting and changing of doors. The former is an inexpensive method of establishing individuality ... and the latter has to do with security (p. 80).

Units were repainted very soon after occupation because the NHT uses only one or a very few colors in its scheme. External V-jointed doors are normally used in these developments to help keep costs down, but the fact that many households replace these with panel doors soon after occupancy casts doubt on this particular strategy. Occupants are paying twice for similar products. In the long term it would be less expensive to pay for the panel doors as part of the original unit than to pay for the cheaper doors and then replace them. Masters (1999) noted, too, that consumers were not enamoured of precast and cast *in situ* walls. They almost invariably make extensions to prefabricated units in block and steel and sometimes replaced the prefabricated walls themselves with block and steel, again paying twice for the same thing.

George (1984) evaluated a development located in Ocho Rios, a major tourist town on Jamaica's north coast. The study was conducted more than five years after completion of the development, enough time for households to have set down roots and to have modified or improved their environments more to their liking. The development had been described as one of the 'better' schemes of its type by the public sector agency responsible for its construction, which interpreted the later addition of carports and washing areas and the expansion of the unit itself as proof of the success of its starter home approach. (George, 1984). But even after five years, 67% of the respondents disliked everything about the unit. There were complaints about the roof, the size of the unit, and the 'design'. The most frequently mentioned specific problem was the party, or shared, wall. George observed (1984): It is not surprising that 65% of respondents said that 'If I had my way I would not now join a similar scheme!'

Twelve years later, in 1996, research in Greater Portmore, a dormitory low- to middle-income community some 25 Km outside the capital, Kingston, indicated that the situation had not changed. Among other questions, respondents were asked if they would purchase the units they occupied if they had to start over and whether they would want to be living at the current address in the next decade. The responses elicited were similar to those in 1984 "...40 per cent of respondents did say that they would not purchase the units [if they could start over] and 39 per cent would not want to be living at their present address, if things remained the way they are." (George, 1996, p. 19).

**Table 1. Percentage Distribution of respondents by major problem\***

Major Problem*	Percentage of Respondents		
	Quad	Urbana	Overall
Poor design	87	81	80.6
Faulty construction/workmanship	71	80	71.7
Size of units	57	48	50.7
Bathroom design	16	8	11.9

\* A 'major' problem was one reported by at least 15 % of respondents in one of the schemes

erly sealed joints. Other problems were cracks in the wall and ceiling, settling of water on the roof, paint that stripped, and floors that were not level.

In the bathroom at Manley Meadows, showers were a mere 45 cm square. Some residents had removed them altogether and, in an extreme case, one person was using the shower to plant flowers. A somewhat larger shower would not have increased the selling price of the units significantly, especially if adjustments could have been made elsewhere. More serious was the decision to use a single outlet pipe for the kitchen and the bathroom. Whenever the outlet pipe was blocked, kitchen waste ended up in the bathroom, creating a nuisance. Again, separate outflow pipes for the kitchen and toilets would not have made the units unaffordable. The builders' decision to combine these pipes raises questions about the logic and practicality of their decisions.

### ***Unit of Preference***

Respondents were shown pictures of the quad, urbana, and detached studio designs and asked to rank them in terms of their relative attraction, ('1' was the highest or best rank and '3' the lowest). Overall, the respondents' level of 'disloyalty' to their unit was high, and followed from the level of dissatisfaction noted above. The detached studio was easily the unit of preference, having been ranked first by 84% of the respondents. The respondents put a very high premium on privacy. Also, and linked closely to this desire for privacy, it is a norm in Jamaica that ownership should enable one to 'walk around' his property. But there are also practical considerations. Given that the studios are starter homes to be expanded over time, the detached unit offers the owner more freedom in the choice of modifications than either the quad or the urbana. The quad was a distant second to the detached studio, ranked first by only 13% of respondents, and the urbana ranked first by a mere 4%.

Table 2 summarizes the results, by development. The table shows the relative number of respondents in each development who ranked each type of unit '1', '2', or '3'. For example, 11.2% of Greater Portmore II respondents gave the quad a rank of '1'

## Method

This report is based on exploratory research carried out in 1998 in Greater Portmore II and Manley Meadows. Greater Portmore II consists of quad<sup>2</sup> units and was completed in 1996. Manley Meadows, a low-income development comprised of 'urbana'<sup>3</sup> units only, was completed in 1998. It is located in the downtown Kingston area and adjoins a typical inner city community. Quads and urbanas are in the 20 to 25 sq. meter range (See Figures 1 & 2).

Using structured questionnaires, information was sought about respondents preferences for the quad, urbana, and detached studio; problems with the unit they occupied; and their suggestions for a mix of units suitable for low-income persons. The detached studio unit was included in the questionnaire to evaluate issues of 'external' privacy. No respondents lived in this house type. The research set out only to describe the responses of occupants, with perhaps recommendations for future low-income schemes, with no attempt to gather data on any hypothesised explanatory variables. The unit of observation was the head of household or spouse.

There were 429 persons interviewed in Manley Meadows and 520 in Greater Portmore. A total of 748 questionnaires were administered to heads of households and 183 to spouses: there were 18 'No Response'. On none of the variables was the distribution of responses by spouses significantly different from those by heads of households. Consequently, they were combined.

## Findings and Discussion

Respondents were first asked to identify the problems they had with their units. There were statistically significant differences between the two developments in the relative numbers of respondents reporting specific problems ( $p < .05$ ). However, both distributions resembled each other. The major problems are shown in Table 1.

From the distribution by major problem, it is clear that two types of difficulty predominated - poor design and faulty construction, each type accounting for more than 70% of respondents in both developments. The developments were built by the same company. This company uses system building, and one of its important selling points is the 'scientific' nature of its construction process. Yet, in Manley Meadows, the later scheme, relatively more persons complained about faulty construction. Interestingly, complaints about the size of unit, were not the most numerous, indicating that low-income households are prepared to trade size of unit for quality.

People's privacy was routinely invaded because of the thin walls and, in the case of the urbana the upper level floor. These units have no insulation whatsoever. Urbana residents complained that any noise made in the unit upstairs could be heard (and deciphered) in the one below it. And, in both schemes, neighbors could hear what was happening next door. Other design problems had to do with poor ventilation and the low height of the roof.

Water leakage was the major consequence of poor construction or faulty workmanship: when rain fell, water came in under the door and windows and through impro-

**Table 2. Percentage of respondents by rank awarded to unit type, by scheme**

TYPE OF UNIT	PERCENTAGE OF RESPONDENTS AWARDING RANK					
	Greater Portmore II			Manley Meadows		
	1st	2nd	3rd	1st	2nd	3rd
Quad	11.2	73.8	15.0	16.6	59.8	23.6
Urbana	5.0	12.8	82.2	6.3	25.4	68.3
Studio by Itself	85.3	12.0	2.6	79.3	13.6	7.1

compared to 16.6% in Manley Meadows. A rank of '2' was given by 73.8% and 59.8% of respondents respectively, and a rank of '3' by 15.0% and 23.6%.

The rank correlation between the two sets of cells was +0.95 ( $p < .01$ ), suggesting that the shapes of both distributions were very similar and that current residence was not a good predictor of unit preference. Regardless of where the respondent lived, the detached studio was the overwhelmingly preferred unit, ranked first by 85% of respondents in Greater Portmore II and by 79% in Manley Meadows, with the quad getting the bulk of rank 2 and the urbana, 3. Implied in this finding is that quad and urbana occupants were dissatisfied with their units and, if a studio unit was all they could afford, they would have preferred it to be detached.

That the detached studio was perceived as the best studio by a bulk of respondents in both schemes was not surprising. What was a little unexpected was that residence of respondent was also not a good predictor of the second choice. If ownership and occupation of a unit and the investment of a very high fraction of a household's resources in its acquisition are presumed to induce some acceptance of house type, then a majority of respondents should have scored 'their' units second to the detached quad, as happened in Greater Portmore II (74% of respondents). But this did not happen in Manley Meadows. There 60% of respondents scored the quad second compared to only 25% who scored the urbana second. Urbana occupants, therefore, were more dissatisfied with where they lived.

An additive preference score was developed to translate the choices into an overall score. The scores for the ranks were weighted as: 3, 2 and 1. Percentage of respondents was used to weight these, and the sum was calculated and then 'normalized' out of 100. Table 3 shows the results.

The preference score summarized what has been argued so far and clarified the degree to which the respondents preferred the detached unit. Based on the composite scores, the detached unit was about one and a half times more popular than the quad

**Table 3. Overall ranking of unit types and composite preference score by unit type**

TYPE OF UNIT	RANK			COMPOSITE PREFERENCE SCORE
	1	2	3	
Detached studio	83.8%	12.3%	3.9%	93.2
Quad	12.7%	69.0%	18.3%	63.3
Urbana	4.4%	17.8%	77.7%	43.3
Score	3	2	1	

and over two times as popular as the urbana. The urbana unit, the most unpopular unit, received a failing grade of 43%. According to consumer response, as it is currently designed, there is no ground for replicating the urbana as a low-income housing solution. More generally, the strong rejection in both developments of the row-houses – the quad, and the urbana – should be of concern to the institutions putting them on the market.

#### ***Mix of Solutions for Low Income Persons***

Respondents also were asked to recommend the type of unit they felt should be built for low-income persons. No information was provided on cost. Fifty-six percent recommended a two-bedroom detached unit<sup>4</sup>. These units are well outside the affordability of such households so, at first glance, the response seems to be the respondents' dream house, unrelated to affordability. But this explanation is not fully satisfying. The way the question was phrased - What kind of unit do you think the NHT should build for low-income persons? - could have affected the answer. The National Housing Trust (NHT) is a public sector mortgage company. It finances housing developments and had provided mortgage loans for both developments. The Trust is funded mainly by involuntary statutory deductions from employers and employees at source and from voluntary contributions by self-employed persons. The contributions made in any one year are held and invested by the Trust for seven years, after which employee and self-employed contributions are refunded, with interest.

There was no evidence that respondents expected the units in either development to be free, but they may have felt that, since NHT's contributions were a form of forced savings, the Trust really should build, or heavily subsidize, 'dream' houses - i.e., detached 2-bedroom units - to 'give' to contributors. They may also have felt that a two bedroom unit more accurately met the space needs of low-income households.

The next largest group of respondents recommended detached studios, less expensive than the two-bedroom unit but more expensive than quads and urbanas and more

**Table 4. Percentage of respondents by type of unit recommended for Low-Income Persons**

TYPE OF UNIT	PERCENTAGE OF RESPONDENTS
2br stand alone	56.0
Stand alone studio	43.3
Quad	23.0
2 B/R row house	11.9
Urbana	6.5

land-consuming. Having land around the home seems important to these respondents. The quad received support from about half as many recommendations as the detached studio, and again the urbana trailed far behind.

### Discussion

The preference scores given to detached studio units and, to two-bedroom detached units, suggests that low-income occupants have housing preferences and desires that are not affordable to them. They also had desires for “extras” that would substantially add to the costs of the units: parking nearby, French doors and windows, individual walkways, and telephones before occupation.

There were some real problems with the construction of the units: thinness of walls and floors, improperly hung doors, poorly sealed joints and roofs, and generally poor workmanship. Some of these problems affected the privacy felt by the occupants. Many of the quality concerns will result in higher maintenance and replacement costs.

In George’s 1984 study, there were complaints about the location of toilets that had been placed with the entrance directly opposite the kitchen. In 1998, at Manley Meadows there was a similar complaint that the toilet was too close to the kitchen: to minimize the amount of piping needed, the kitchen sink was put on one side of a common wall and the toilet fittings on the other (See Figures 1 & 2.) This back-to-back arrangement contravenes strong Caribbean social taboos against the juxtaposition of toilet and kitchen. Relocating the kitchen sink to the far wall would have meant marginal increases, if any at all.

It is possible that the designers were ignorant about what elements in a house are regarded as important to the end user. Houser’s (1995) point in relation to kitchens is applicable:

Typically, design students have appeared to lack significant practical skills in food preparation beyond opening cans, ordering Chinese or using microwaves. This reality hampered their abilities to design kitchens effectively. Lacking practical experiences they often made design decisions on purely aesthetic bases (p. 20).



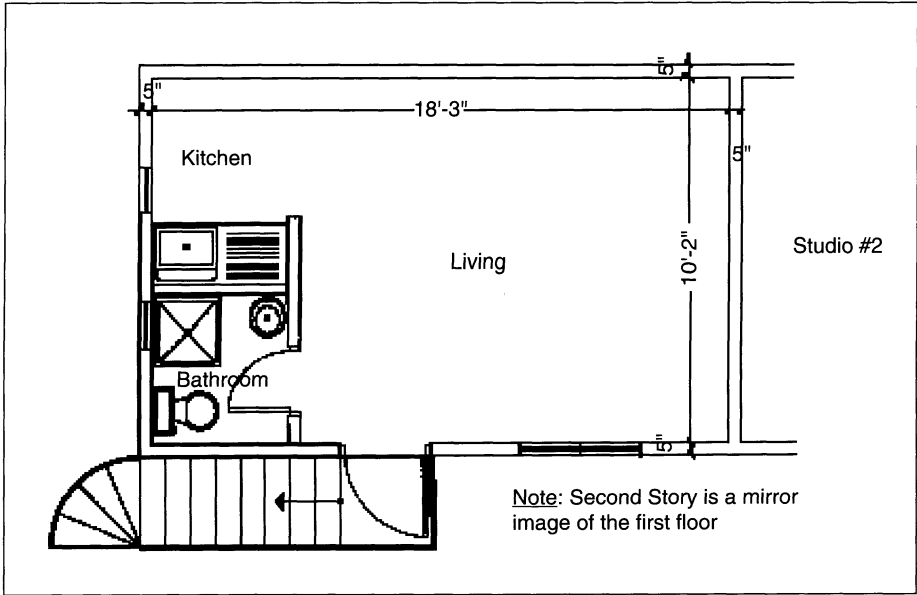


Figure 1. Floor Plan - Urbana.

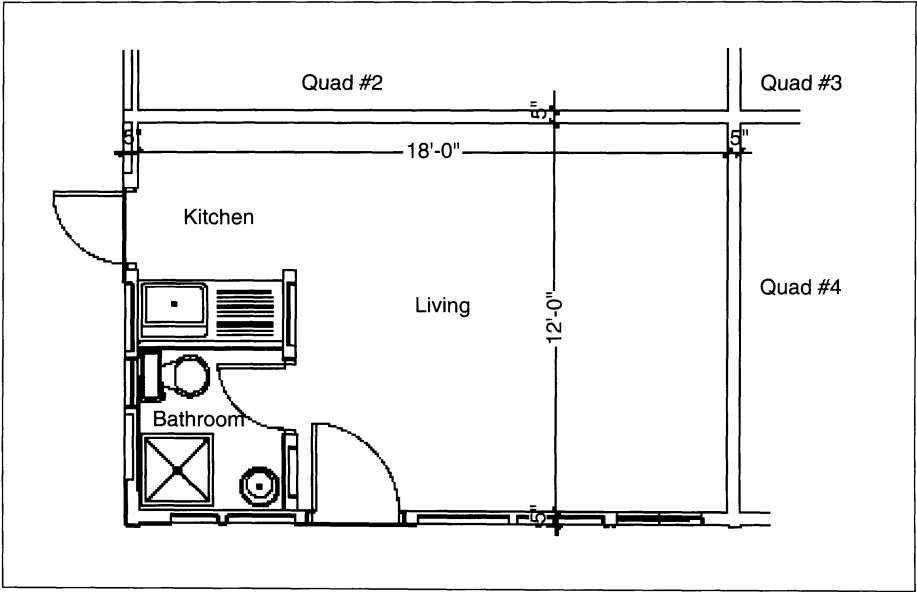


Figure 2. Floor Plan - Quad Unit.

The Jamaican units were not designed effectively, since they did not combine the aesthetic and the practical. As to the elements in small houses that matter, research in Canada has found that the kitchen, bedroom, and storage elements are altered most significantly "... indicating their critical status in the accommodation of users' needs." (Friedman & Pantelopoulos, 1996). These spaces then are the elements that should become priorities in the design of affordable housing. In the case of the two developments discussed, bedrooms were not an issue but indications that kitchens and storage space are critical was consistent with the Canada model.

The low-income households examined in this paper experienced three problems when they purchased their small 'affordable' units: very high relative cost of the units, significant negative externalities in some cases, and poor quality housing. The argument that these occupants deserve value for money spent on housing is a quasi-ethical one having to do with the notion of fairness in the market. It could also be argued that improvements could have been made that would have removed much of the current dissatisfaction and that might have reduced some of the irritation with non-negotiables such as unit size and party walls, with little effect, if any, on cost. Designers should pay attention to the cultural requirements and user needs of the final consumer.

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### End Notes

<sup>1</sup> The obverse notion that housing in the informal, or squatting, sector is 'free' is untenable. For builders in the informal sector, formal sector sources of funding might include credit union loans, and at least some material and skills are purchased in the formal sector.

<sup>2</sup> A 'quad' (shortened form of quadraminium) is a studio unit that is one of a cluster of four, each sharing two walls with two other units. Quads are one-story buildings.

<sup>3</sup> Urbana units, like the quads, are studio units and come in blocks of four. However, the urbana cluster is a two-story building. Units on the top story can expand outwards and down while those on the ground floor can expand outwards and up.

<sup>4</sup> Other researchers (IMP, 1998) also conducting preemptive research for a construction company found that, in response to a different question, What type of unit would you purchase? 66% of respondents said that they would purchase two bedroom units although effective demand was much lower as less than 30% claimed they could afford the deposit. In that survey, 25% of respondents said they would purchase a quad as opposed to 5% who would have purchased a detached studio.