

# **IMPROVING COMMUNITY HOUSING, AN IMPORTANT DETERMINANT OF HEALTH THROUGH MECHANICAL AND ELECTRICAL TRAINING PROGRAMS**

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## **Abstract / Résumé**

Until recently, "status quo" houses (i.e., dwellings with no running water, washrooms, proper kitchens, or adequate electrical services) were typically built in First Nations (FN). We describe a training program that upgraded existing status quo homes in Fort Albany First Nation to a level comparable to the rest of Canada, on a limited budget. The program provided not only an educational experience for the students, but also paid employment for Fort Albany First Nation members, as well as long-term community benefits.

Jusqu'à, à présent, les maisons "statu quo", (c.à.d. les habitations sans eau courante, sans toilettes, sans cuisines appropriées et sans électricité adéquate), ont été typiquement construites dans les Premières Nations. Nous décrivons un programme de formation qui, avec un budget limité, a permis d'améliorer les maisons "statu quo" dans les Premières Nations, Fort Albany, à un niveau comparable au reste du Canada. Ce programme a non seulement fourni une expérience éducative aux étudiants, mais a également créé des emplois rémunérés aux membres des Premières Nations, Fort Albany et a démontré des avantages à long terme pour la communauté.

## Introduction

In Canada, although the federal government

does not specifically acknowledge a constitutional responsibility for hospital care. It does, however, recognize a "fiduciary", (*with confidence and trust*), responsibility for Aboriginal community health care services over and above those provided by the province (Weeneebayko Health Ahtuskaywin, 1996:4).

Recently, it has been estimated that almost one billion dollars is spent annually on First Nation and Inuit health (DeLeary, 1997). However, in Canada, Aboriginal people ("Indian" [Status, non-Status], Inuit, and Métis) have according to data collected in 1990-1991, the

poorest overall health status... still have seven years less life expectancy than the overall Canadian population... and almost twice as many infant deaths—a higher rate than the poorest neighbourhoods in urban Canada (Federal, Provincial and Territorial Advisory Committee on Population Health, 1996:30).

MacMillan and MacMillan (1996:1569) utilizing more recent data (up to November 31, 1995) reached similar conclusions, stating that:

Canadian aboriginal people die earlier than their fellow Canadians, on average, and sustain a disproportionate share of the burden of physical disease and mental illness.

Although it is obvious that the delivery of health care to Aboriginal people must change to improve the dismal state of Aboriginal health (Tsuji, 1998), self-determination in the health care system is only part of the solution (World Health Organization, 1999).

As noted by Canada's National Forum on Health (1996:2-3)

The health care system is only one among a number of influences on the health of the population. Other factors, such as personal habits, the environment and social and economic conditions are more significant determinants of health... In Canada, *Aboriginal communities face poor housing conditions, high unemployment rates, low incomes* [our emphasis] and given the long history of external control, more significant impediments to community action.

Indeed, Health Canada (1995:1) even states that

Conditions in our environment—our social, cultural, economic and physical surroundings—influence our ability to achieve good health. In any community, *a safe environment means safe*

*water and food supplies, suitably built and maintained housing, and proper disposal of wastes [our emphasis].*

It is evident that many factors account for the dismal state of Aboriginal health in Canada; thus, this problem, as stated by the Canadian federal government, must be viewed from a holistic viewpoint.

In light of the Canadian government's viewpoint, it is illogical that the federal government has recognized a fiduciary responsibility for Aboriginal health but has never acknowledged that the provision of housing was ever a treaty right granted to people of Aboriginal ancestry. Nevertheless, the federal government has given a set amount of money to First Nations since the 1940s, to facilitate the building of houses on First Nations land. For example, Moose Cree First Nation has for the last 15 years received approximately \$450,000.00 annually for the provision of housing to their on-Reserve First Nation membership. No parameters to the type of house to be built was or has been specified by the federal government except that dwellings, at the minimum, must conform to the "Indian Building Code". The Indian Building Code is a relatively small document (191 pp.; Public Works Canada, 1985) that sets minimal building standards for houses to be built on First Nations land. This type of housing has been termed "status quo". Status quo houses are sub-standard dwellings, compared to the rest of Canada. These houses are not equipped with running water, washrooms, proper kitchens, or adequate electrical services (B. Katapatuk, former Housing Committee member, Moose Cree First Nation, personal communication). As stated previously, adequate housing with running water is not a luxury but a necessity for maintaining good health. Many Aboriginal health problems can be correlated with poverty (Tookenay, 1996; World Health Organization, 1999).

It should be stressed that only on First Nations land can the Indian Building Code be used as a guide for constructing houses. In contrast, the rest of Canada uses either the provincial building code guide (e.g., Ontario's guide is 538 pp.; Ontario Ministry of Housing, Buildings Branch and Ontario New Home Warranty Program, Technical Research and Training Department, 1991) or national guidelines, whichever is more stringent. Thus, First Nations in the past (and present) were faced with a dilemma, build relatively more houses using the Indian Building Code or relatively less houses that meet the higher standards imposed by provincial/federal specifications. Usually, First Nations had no choice in the type of houses to be built because water or sewage facilities were often not present in these communities. Thus, there exists today numerous sub-standard houses in First Nations communities. Unfortunately, the onus of responsibility that has been thrust upon First Nations by the federal government, to find solutions

to the problem of providing adequate housing, on a limited budget, has not changed for individual First Nations for at least the last 15 years (B. Katapatuk, personal communication).

Until recently, most First Nation communities used their housing money to build "status quo" housing. In the last 10 years in the Mushkegowuk Territory (western James Bay region of northern Ontario), First Nations such as Moose Cree First Nation have used the money allotted to them for housing (\$450,000.00/year) to secure loans from the Canada Mortgage Housing Corporation. These loans have helped to finance the construction of 15 houses per year at a cost of approximately \$100,000.00 per house (compare this figure with the \$42,000.00 per house for status quo housing). These Canada Mortgage and Housing Corporation houses meet provincial/federal building codes. Under this type of arrangement, Moose Cree First Nation tenants pay a monthly mortgage to the Band for 25 years, and after this time the tenant acquires ownership of the house, after a nominal fee is paid to the Band. Canada Mortgage and Housing Corporation has access to the Moose Cree First Nation account to collect the tenants monthly payment even if the First Nation resident has not paid the Band. The onus of responsibility is on the Band to collect the tenant's mortgage. Tenants who cannot afford to pay their mortgage are asked by the Band to exchange houses with another Band member who can afford to pay the mortgage and also occupies a First Nation house with no monthly mortgage (B. Katapatuk, personal communication). Although these types of solutions are of importance in constructing good quality new homes in First Nations, there are problems with the Canada Mortgage and Housing Corporation "solution" (note: this issue will not be addressed in the present paper). Also, what of the old sub-standard status quo homes already in existence in First Nations?

In this paper, we report on an educational/training program initiated by Fort Albany First Nation, in conjunction with RTI, Inc., that upgraded status quo homes in the community to a level comparable to other dwellings in Canada. The program we describe not only provided an educational experience, it also supplied paid employment for Fort Albany First Nation members, as well as long-term community benefits. For example, the "retrofitted" houses (hot and cold running water, kitchens, bathrooms, and 100 amperage services, were added to status quo homes) will have a major impact on the general health of the community.

## **The Community**

Fort Albany First Nation is a remote community of approximately 850 Omushkego Cree. It is located in an area designated by the Cree as the

Mushkegowuk Territory (western James Bay region of northern Ontario, Canada). This area contains six First Nations (New Post, Moose Factory, Fort Albany, Kashechewan, Attawapiskat, and Peawanuck), as well as one town, Moosonee. Like all First Nations of the Mushkegowuk Territory (except for New Post which is accessible by road), Fort Albany First Nation is a fly-in community, except during the winter months when a winter road exists joining the First Nation communities of the coast with the town of Moosonee. This town is accessible from the south via railway.

In Fort Albany First Nation there are 198 status quo houses, seven Canada Mortgage and Housing Corporation houses, and one old age home. Overcrowded homes are common in the Mushkegowuk Territory (Weeneebayko Health Ahtuskaywin, 1998).

### **RTI Inc.**

RTI Inc. is a private company that helped to prepare the original grant proposal for funding of the project. RTI Inc. also supplied the instructors for the courses and handled all logistical concerns (e.g., transporting equipment and material to this remote region). Guy Iannucci was the program coordinator and has taught numerous outreach, community-based programs (e.g., water treatment, pump repairs) in northern Canada for Northern College. Both Anthony Iannucci (Master Plumber) and Milton Kroghan (licensed electrician) have more than two decades of experience. They acted as the mechanical and electrical instructors, respectively.

### **Fort Albany First Nation Retrofit Program**

In May, 1997, the Fort Albany First Nation retrofit program was initiated through funding provided by the Ontario Ministry of Northern Mines and Development. The objective of this program was to bring existing status quo housing up to standards comparable to the rest of Canada. In other words, the program was to supply these services: upgrade existing 15, 40, and 60 amperage services to 100 amperage; rewire the houses as necessary; install running water in the houses (cold and hot water); construct full bathrooms (bath, shower, toilet, washbasin and vanity); add kitchen sinks and cupboards; and build or refinish all related walls, floors, and ceilings.

Original targets were set at 52 houses fully wired and plumbed. In general, the program has been a success with 52 houses being retrofitted during Phase I. This achievement would not have been realized without the help of the Fort Albany First Nation mechanical (plumbing) and electrical training programs. These programs worked in conjunction with the retrofit program.

## **Fort Albany First Nation Mechanical and Electrical Training Programs**

### **Objectives**

Phase I of the mechanical and electrical programs were both 20 weeks in duration. The objectives of these training programs (managed by RTI Inc.) can be divided into two broad categories, short-term and long-term.

Short-term objectives were 1) to train First Nation people in the community to not only install but also provide upkeep for residential plumbing and electrical services. The maintenance aspect of the training program cannot be over-emphasized. Plumbing and electrical utilities must be constantly maintained. In remote communities, such as Fort Albany First Nation, it is especially important to have local people capable of this type of work because of the time and money it takes to bring trades people to the community. Further, locally trained people will be more familiar with the mechanical and electrical systems because in most cases they would have participated in the installation of them. Familiarity and relevance have been shown in several studies of education (e.g., Lipka, 1990; Martin, 1993; Wilson, 1992), to be important components of the learning process for Native North Americans. 2) to better the community through community member participation and the completion of projects; and 3) to interest First Nations members in apprenticeship/journeyman programs. Even if a student does not take this educational route, the person, at least, has an understanding and background in the subject areas covered. Thus, these former students would hopefully be able to maintain their own house or make informed decisions if ever in a position of responsibility (e.g., on a First Nation council or committee).

Long-term objectives were twofold, 1, to have licensed plumbers and electricians residing in the community; and 2, to establish a pool of community members from which teachers could be selected to teach other community members. That is, First Nation teachers teaching First Nation students relevant curricula in a culturally appropriate manner.

### **Fort Albany First Nation Student Selection**

In general, the students selected were inexperienced having, little formal training in the plumbing and electrical fields. Unfortunately, the instructors had no input in student selection; the Band office supplied a list of names of people to take part in the program. Six students were pre-selected by the Band for each course. No prerequisites were required except that the person had to be unemployed. Two students took leaves of

absences from their regular jobs to gain experience through our training programs.

Aboriginal communities contemplating similar programs should consider these important issues that arose during the Fort Albany First Nation mechanical and electrical training program. Ideally, prospective students should have been screened thoroughly to find students who have an aptitude for this type of training/work or at least a real interest and willingness to learn. Also, students should not have been paid directly by the First Nation but by an appointed agency. This arrangement would have prevented any misunderstanding of the employment status of the student. In reality, these types of students were only casual, full-time employees, and were thus ineligible for benefits enjoyed by permanent First Nation employees. Because students perceived they were full-time Band employees, they requested the same benefits, such as paid holidays (e.g., cultural leave for harvesting of waterfowl). The budget for the present program was limited (and structured), and could not accommodate this type of expense. These issues should have been addressed prior to the start of the training program.

### **Costs/Budget**

Each training program (mechanical and electrical) had a budget of approximately \$100,000. The budget was spent as follows: materials, equipment, and tools - \$20,000; students paid at minimum wage - \$23,000; gas and truck rental - \$3,000; school supplies and books - \$3,000; travel expenses, accommodation, and meals for instructors - \$18,000; salaries for instructors, and miscellaneous expenses - \$33,000.

### **Curriculum**

The program was a 20 week course (40 hours/week) with 40% of the course devoted to theory/didactic (in-the-classroom time) and 60% devoted to practical experience (in-the-field time). Subject areas included: trade mathematics; trade theory; English; code specifications; blueprint reading; and terminology. The program was structured on work modules with the evaluative component consisting of two parts: written, a three to four page test (e.g., terminology, specifications); and practical, that is, evaluation of the finished product.

Students worked side-by-side with qualified tradesmen. In most cases, students were able to perform the tasks expected of them (i.e., basic plumbing and electrical activities). However, terminology was a problem, not unexpected because of the lack of practical experience of most students. As a result, a lot of instructional time was spent on terminology and its importance. It is difficult for a person to know what to do, when one does not know what is being asked of them.

Students typically enjoyed the practical experience much more than the theory portion. The theory portion of the course was not as appealing for two reasons. The first was because few students had the field background to gain the most benefit from the classroom time as mentioned previously. Usually an apprentice is required to spend one-and-a-half to two years (3,000-4,000 hours) in the field prior to entering trade school. This type of experience allows a student to have a basic knowledge and understanding of terminology and "real-life" situations. Second, Native North Americans have been shown in numerous studies (e.g., Lipka, 1990; Reyhner, 1993; Zwick and Miller, 1996), to learn best through traditional methods of learning, that is, observational and hands-on/experiential techniques. For these reasons, students were first taken into the field before an attempt at learning theory was made. Ideally, the course should have commenced at the same time as the retrofit program (May 1997) but, final approval of the funding was delayed. The actual start-up date of October, 1997 did not allow the training program to take full advantage of the field experience that would have been gained from a simultaneous start-up date with the retrofit program. Nevertheless, the students in the training program could take pride in what they have accomplished.

Although not all students achieved the same level of competence, they all understood basic mechanical and electrical theory as applied to the residential setting. For example, a group of four students could easily rough-in and do the plumbing and wiring for a house.

### **Accomplishments and Experiences Gained by the Students During the Tenure of the Program**

At the beginning of the course, a classroom did not even exist from which the theory portions of the programs could be taught. The students had to build their own classroom. The finished classroom measured approximately 25' X 50' and contained two bathrooms and laundry facilities. Students constructed the walls, installed the plumbing and performed the electrical work themselves under the direct guidance of their instructors.

During Phase I of the training program, 52 houses were retrofitted, while 45 houses were retrofitted during Phase II. Former students of the training program (three electrical and three mechanical apprentices) are now working on Phase III of the retrofit program. They continue to work under the supervision of qualified tradesmen. The number of retrofitted houses now totals 130.

Other projects completed, and a sampling of experiences gained by the students, in addition to the classroom construction and the plumbing and electrical activities of the retrofit program, included 1) the removal of pipes



and wiring from the carpenter shop and rewiring and adding lighting to the carpenter shop; 2) the installation of electrical heaters in the seniors home; 3) laying cable for the new health care centre; 4) repairing motors at the hospital. These varied projects not only supplied an important experiential learning environment for the students, but their completion benefitted the community as a whole.

These plumbing and electrical training programs provided invaluable services to the community. The students have helped in the completion of projects that might otherwise have gone unfinished because of funding shortfalls. Thus the benefits accrued during the tenure of these training programs were tangible.

## **Discussion**

As has been noted in another First Nation educational program,

the project must be viewed from two perspectives: the value of the process the students went through during the project and the value of the product they produced (Wilson, 1992:16).

On both these points, the Fort Albany First Nation mechanical and electrical training programs have been a success. First, at least three of the six students in each program have shown themselves to be capable of becoming licensed in their respective trades, if given the opportunity. Second, the importance of the training program to community health cannot be overemphasized. As reported by the regional First Nation health organization (Weeneebayko Health Ahtuskaywin, 1997:4),

Reliance on untreated or inadequately treated water for personal consumption is related to gastrointestinal ailments, skin conditions, and opportunistic viral infections which can affect persons who have existing ailments or who lack access to the necessities for proper hygiene [i.e., potable running water, and an adequate sewage system].

Taking into account that the new water treatment plant is now in operation, Fort Albany First Nation membership now has access to what Health Canada (1995:1) considers to be some of the important determinants of good health; that is, "safe water... suitably built and maintained housing, and proper disposal of wastes".

In light of the success of the Fort Albany First Nation mechanical and electrical training programs, it is in our opinion that more emphasis should be placed upon the training of First Nations people, in these areas, in all First Nation communities. Remote First Nations communities cannot be dependent solely upon external "experts" and workers. Self-sufficiency is

an integral part of the self-determination process. Further, special projects (e.g., the building of a new school) could become "community" projects, designed by First Nations, built by First Nations, maintained by First Nations, for First Nations. Community pride is important to mental well-being.

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