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DEVELOPMENT PLAN
1985 TO 1988
for
CONSTRUCTION
RESOURCE
and
DEVELOPMENT
CENTRE

USAID/JAMAICA

BY EDWARD SCOTT

NOVEMBER 1984

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Edward Scott

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SUMMARY

The first ten months of CRDC's achievements has served to firmly establish the Centre as an integral element of the Jamaican Construction Sector. The resources originally furnished by USAID and the Centre's founders provided the opportunity to identify the range of needs in the Industry and successfully demonstrate the potential for the sustainability of the CRDC concept. The Centre's work also served to clarify the specific areas and extent of productive future activity, as well as the types and levels of resources needed to permit the Centre to strengthen itself and respond appropriately to the demand for increased levels of service.

This proposal describes the demand for increased levels of services and the resources needed to develop the Centre's capabilities to respond appropriately while achieving self-sufficiency. The document represents a request for USAID support in the amount of US\$386,000 distributed over the three year period 1985-1987. The CRDC development plan and objectives demonstrates how USAID's important first-year contribution would decrease over the following two years and ensure CRDC's sustainability at the end of 1987.

The proposal describes how CRDC will use its current capabilities and knowledge of the Construction Sector to complete the basic elements of internal organization and development during the next 24 months. The schedule for acting on identified opportunities to generate income is, however, very conservative. CRDC is well aware that the development of a strong organization is the key to sustainability and must precede extensive marketing

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activities. Attempts to conduct business at intensive levels from an unstable base in the near term might well result in the presentation of unsatisfactory products and the consequent loss of network support and future potential. Therefore, the Centre does not intend to act on every currently identified opportunity, but will expand services slowly over the next three years.

The implementation plan, budget, cash flow tables and objectives demonstrate how CRDC will use USAID and Centre-generated income in a process which moves from internal development to full production and marketing with progressively increasing service and income levels.

1985

CRDC will focus 1985 efforts to obtain equipment, recruit and train staff and strengthen internal operating systems and procedures. The requested USAID contribution of US\$207,360 (J\$974,592) will be the primary source of funds. Very little additional income (J\$170,000) would be generated by CRDC during the year. Service levels will increase slightly over those of 1984.

1986

Second year efforts will complete internal development and the Centre will realize the capacity for full production by the end of 1986. The USAID contribution of US\$128,800 (J\$605,360) will be supplemented by Centre-generated income of J\$335,000. Service levels will increase slightly over those of 1985.

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1987

During 1987, CRDC will be operating at full capacity and will conduct full scale marketing activities. The requested USAID support US\$50,000 (J\$235,000) will be used to ensure financing for operations early in 1987. CRDC-generated income J\$650,000 will build rapidly during the year and revenues will be substantially greater than those of 1986. CRDC will become fully sustainable at the close of 1987. Service levels for 1987 will double those of the previous year.

THE CONSTRUCTION RESOURCE & DEVELOPMENT CENTRE

BACKGROUND

The CRDC is a Limited Liability Company (private, non-profit) organized under Jamaican laws and chartered in December 1983. Operations commenced in January 1984, the organization was fully staffed by March 1984 and pertinent systems were in place by May of this year.

Initial organizational and financial support came from the Incorporated Masterbuilders of Jamaica, Electrical Contractors Association, The Joint Trade Unions, Building Research Institute and HEART, all of whom are represented on the CRDC Management Committee. A grant of J\$82.6 thousand was provided by USAID to assist with the Centre's operations during the first year.

ORIGIN OF THE CRDC CONCEPT

The idea of the CRDC arose within the context of the 1981-82 building boom as it became clear that rapid growth in the Industry coupled with the emigration of large numbers of skilled craftsmen in the late '70's resulted in a shortage of labour at the advanced skill level. The problem was compounded by the lack of meaningful training programmes aimed at upgrading the unskilled and semi-skilled labour force.

The situation was further complicated by the lack of a recognized system of performance standards at the grades I, II and III skill levels which permitted job applicants to claim the highest skill/pay level (grade I). In the absence of any objective means of certification of performance levels,

builders were forced into a "pot-luck" employment process resulting in costly and inefficient use of time and materials. No referral/placement system was available to channel those craftsmen who were observed to have appropriate skills.

Representatives of the Construction Industry also noticed that the construction skills training that was being provided by public and private sector institutions was producing a number of graduates in trade categories and at skill levels which did not reflect the Industry's requirements. Since data accurately reflecting the Industry's needs was not available, little could be done to redress the observed anomalies.

The CRD was thus formed to assist the Construction Industry to resolve the identified needs of the sector and to work with public sector institutions to obtain the appropriate results. At the time of its inauguration, the CRDC was specifically charged with the following tasks as summarized in the initial CRDC proposal to USAID.

- 1) Provide detailed information concerning current utilization of construction labour and the skill requirements of the Industry and recommend the manner in which these requirements can be met.
- 2) Co-ordinate the input of expertise from the Industry into training programmes to ensure their greater relevance.
- 3) Offer support services to the Industry such as specialized training not available through existing institutions, career information and job referral and placement.

ROLE OF CRDC

The role assumed by CRDC is multifaceted. It reflects the founders' expectations and the Centre's operating context. Briefly, the CRDC is required to play the role of bridging agency, interpreter, co-ordinator and catalyst.

In its role as bridging agency, CRDC is expected to effectively link needs and resources of the Private Construction Sector with those of Public Sector.

The effective discharge of this role requires that the CRDC also build appropriate bridges or links between the previously fragmented organizations in the Private Construction Sector so as to provide the basis for a consistent approach to the process of needs analysis, research, training and, subsequently, the formulation of a unified, clear, detailed and accurate Private Sector voice in the ensuing dialogue within the Industry itself and between the Industry and Government.

As interpreter for the Construction Sector, CRDC is expected to move between the various Industry groups to obtain the input necessary to permit the members to clearly identify, organize and articulate their status and needs in a manner which would be meaningful to pertinent Government Institutions and other groups related to the Construction Sector.

The response of groups outside the Private Construction Sector must, in turn, be carried back to CRDC's sponsors and presented to them in a fashion which not only facilitates mutual understanding but also promotes continued interaction and progress towards problem resolution.

The effectiveness of the bridging and interpreter role elements is related to CRDC's co-ordination of the participants' activities, inputs and reactions. The quantity of information processed in the exchange and the overall quality of the presentations is meaningless if each of the individual actors continue to go his/her own way pursuing narrowly defined interests, as has been the case in the past. Thus the co-ordination of members' activities regarding the approach and response elements of the information development

and dialogue process is an important element of CRDC's efforts. Data development and providing a platform for information exchange are not sufficient in themselves to bring about the results desired by CRDC's membership. Co-ordination is clearly necessary.

The successful conduct of the multifaceted role assumed by CRDC is a vital link in the resolution of short term conflicts and crises as well as in the process of growth and productivity in the Construction Sector over the long term.

Even though the CRDC has been in operation for only ten months, the organization has already produced concrete examples of the utility and impact of its established role. A brief presentation of these examples is as follows:

1) Bridging

CRDC built bridges between a broad cross section of pertinent individuals, firms and Industry Associations to permit the collection and validation of information used to produce the Construction Sector's surveys of training needs at the trade and supervisory levels. In order to conduct the work, CRDC elicited Industry-wide support and successfully crossed traditional boundaries between companies, public agencies and Industry Associations in a manner which had not been previously accomplished. In the past, due to competition and concern for confidentiality, the various contractors and groups would not permit access to the data (site diaries, time sheets, wage bills, etc.,) needed to accurately identify labour utilization rates, training needs and manpower requirements. CRDC's work in successfully collecting, analysing and presenting the pertinent Industry data is considered the first successful effort of its type with clear benefits

accruing to both the Industry and Public Sector Training Institutions. The Industry-wide co-operation displayed in recent initiatives requesting CRDC to provide data and information services on a broader and more consistent basis illustrates the fact that the co-operation, improved communication, and related benefits resulting from CRDC's bridging role are durable and useful beyond the limits of the organization's initial research work.

2) Co-Ordinating

CRDC used the bridges it established in the Construction Sector and acted as co-ordinator in organizing the Industry's dialogue with Public Sector Institutions (e.g. HEART, MYCD, SDC and VTDI) regarding training needs and manpower requirements. Consequent to CRDC's efforts, the Industry was able to present itself as a coherent body and by using detailed data and specific recommendations arising from CRDC's research work, was successful in obtaining significant changes in Public Sector training in terms of the number of people trained for specific trades as well as in the level and content of the training programmes themselves.

As a result of the successful conduct of the co-ordinating role, the Construction Industry will realize benefits of more appropriately trained personnel. Public Sector Training Institutions benefit from a more efficient use of their limited resources and the development of a Trades Training Programme which is more responsive to Industry needs.

3) Interpreting

CRDC has consistently served as interpreter of the Industry's needs and concerns while presenting Industry-generated data and communications to Public Sector Institutions and other elements of the Jamaican Private

Sector. The interpreter role is important in terms of both the different "languages" of the various groups and the contexts in which each group operates.

The successful conduct of the interpreter role has helped improve communication within the Industry and between Industry and the Public Sector by presenting information in a manner which is sensitive to the differences in communication and operating methods of the communicating groups.

The continuation of the interpreter role is an important element in ensuring the ongoing productivity of the recently improved Public/Private Sector dialogue regarding the Construction Industry as well as enhanced communication and co-operation within the Industry itself.

4) Catalyst

CRDC acts as a catalyst within the Construction Sector in that it uses information which it has developed or the outcomes of its other activities as a basis for organizing pertinent groups and individuals in a manner which facilitates and ensures that the benefits of productive contributions are continued and enhanced. For example, CRDC used its work in training needs analysis and the course developed in Building Maintenance and Blueprint Reading as a basis for introducing these courses into Public Training Institutions on a permanent basis in a manner which reflects the needs and ability of adult trainees as well as concerns of the Construction Industry.

CRDC's actions have also had a catalytic effect in more discreet ways. The University of the West Indies is setting up a continuing process of in-house maintenance training with CRDC's help as a consequence of the benefits realized by the University after the staff participated in the Centre's Building Maintenance course.

A broader-based indicator of the success and utility of the catalyst role element is found in the way in which CRDC acted to bring together the full cross-section of Construction Industry Associations in the developing initiative to prepare and maintain a thorough data base for use in Industry planning and operations and/or communications both within the Industry and with Government. For the first time, the various Industry Associations (e.g. Masterbuilders, the Engineers, Quantity Surveyors, Architect and Planners, etc.,) and a number of private firms and individuals are coming together to establish the outlines of a constantly updated information base and data dissemination process which will be operated by CRDC. Industry representatives have already had several formal, and numerous informal, meetings in which consensus was developed regarding the details of information required and Industry commitment to fund a first study of the current status of the Construction Sector.

CURRENT CRDC ACTIVITIES: PROGRESS AND IMPACT

The progress which CRDC has made in successfully achieving the objectives established for its first year and in conducting related activities has surpassed the expectations of the Centre's founders and supporters. As demonstrated in the recent USAID evaluation of CRDC's first ten months, the Centre has achieved all of the objectives established for its first year. Significant progress has been made towards completing several objectives set for the second year of effort. The impact of CRDC's work has been very positive and is well out of proportion to the investment in human and financial resources made available to the Centre during its ten months of operation.

The CRDC activities can be illustrated in terms of five areas of operation which are:

- o Research
- o Training
- o Special Projects
- o Liaison/Communication
- o Referral and Placement

A brief description of key CRDC activities and their impact is presented below.

RESEARCH

During the past ten months, CRDC has conducted two formal studies (Labour Utilization/Basic Training Needs and Supervisory Manpower/Training Needs) of two to three months duration, and numerous discreet studies associated with the development and evaluation of specific courses.

The Labour Utilization/Basic Training Needs Study was instrumental in the redesign of Basic Construction Trades Training (Masonry, Carpentry, Plumbing, etc.,) conducted through the HEART Programme. The savings realized by Government through the realignment of trainees and courses based on the CRDC study would, alone, cover the costs of the Centre's first year of operation.

The Supervisory Needs Study provided the first clear picture of the development needs of supervisory personnel in the Jamaican Construction Sector. CRDC followed the Study by identifying a career path for supervisors and foremen and presented the first in a series of courses which will make the career path a reality. No previous work for Construction Supervisors had been done in Jamaica prior to this work which has been validated by Industry and course participants.

The research conducted in conjunction with course development and evaluation is an integral element in the production of effective training and has ensured the viability and success of CRDC training programmes.

TRAINING

Although the objectives for CRDC's first year required the identification of appropriate courses, a strong Industry-based demand for action following the needs analysis resulted in the presentation of four specialized courses (Blueprint Reading and Plan Interpretation, Supervisory Training, Building Maintenance and Welding Upgrading) and two courses in basic skills (Construction Trade Training I and II for members of the Women's Construction Collective). Three additional courses are in the final stages of preparation and will be presented during the first quarter of 1985. Six other courses are in the early stages of development and will be presented later in 1985.

None of the courses presented to date, or those in development, duplicate existing training efforts. In fact, an indicator of CRDC's impact in training is the fact that the courses already presented are being turned over to Public Sector groups (Portmore Academy and CAST) for inclusion as part of their regular programme. CRDC will continue to conduct the developed courses for individuals who do not have access to the training in public institutions because of inappropriate academic backgrounds or current job requirements.

In addition to the effective co-operation with Public Sector Training Institutions, it is important to note that CRDC's training represents the first organized opportunity for employee development/upward mobility within the Jamaican Construction Sector. The courses have been well-received to date as indicated by the growing Industry demand for similar programmes, positive employer feedback and course evaluation. The positive impact of CRDC training efforts is further supported by the fact that the training is being adopted by local institutions on an in-house basis. For example, the University of the West Indies is now organizing its own Building Maintenance Training Programme based on CRDC's work, and with the Centre's assistance.

SPECIAL PROJECTS

CRDC currently operates one special project and is finalizing two others which will come on line by February 1985. The project now in operation is the Women's Construction Collective (WCC). Projects in development include an effort to use bauxite waste to provide tiles for use in local construction and another to identify methods and a network to mitigate effects of natural disasters in local housing and train personnel to train others to conduct the required work.

CRDC refers to such work as "special projects" since pertinent activities go beyond what can be neatly categorized as either research or training and because the characteristics of the effort dictate special treatment.

The impact of the WCC has been very positive to date, both in Jamaica and internationally. The Collective represents the first organized approach in Jamaica to introducing women to the Construction Field and providing follow-up support. Not only is the programme providing valuable employment opportunities for women, but employers also are reporting benefits in that the productivity of the women is good and their presence on the job sites serves to reduce violence and the consequent loss of production time frequently associated with work on local construction sites.

The success of the WCC model has recently been discussed at several international conferences concerned with women's development issues. CRDC has received requests to present the WCC model for world-wide distribution among women's development groups.

The potential impact of the special projects now in the development stages is difficult to estimate. However, employment opportunities and foreign exchange savings would be obvious benefits from the study regarding the use of bauxite waste as a local construction material. Reduced damage to buildings from natural disasters is an anticipated outcome of the Disaster Mitigation Training Project.

LIAISON/COMMUNICATION

Liaison and communication within the Construction Sector and with Government are highly significant aspects of CRDC's ongoing activities. These activities are conducted on both formal and informal bases. Formal exchanges

consist of regular participation on, and support to, Industry and Government committees (e.g. HEART Board, Advisory Skills Committee), interlocking directorates (e.g. HEART Board members sitting on CRDC's Board and vice versa) and work conducted specifically for particular interest groups (e.g. the Basic Trades Survey for HEART and Supervisory and Building Maintenance Training for the Industry). Informal exchanges consist of frequent professional and social contact on a network wide basis and more specific contacts such as those with curriculum developers, teachers and businessmen resulting from work on specific CRDC activities.

The impact of CRDC's liaison and communication activities has already been partially described in this document in the discussion of the Centre's role as interpreter, catalyst etc., for the Industry.

These activities are the vital link in establishing the Centre's support and in ensuring the positive impact of results from the Centre's other specific activities such as research and training. Liaison/Communication activities are also significant elements in recent Industry developments towards improved communication and planning such as would result from an ongoing CRDC data collection and information dissemination process.

REFERRAL AND PLACEMENT

CRDC's work regarding referral and placement to date has been incremental and developmental largely due to the nature and complexity of Government policy-making processes pertaining to these issues and the lack of time and equipment needed to permit CRDC to develop the required data base and personnel files.

Although work in this area is still in the very early stages, benefits can already be demonstrated. CRDC's activities regarding the overall process of certification, registration and referral and placement have served to re-establish these activities on the agenda of Public Institutions like HEART and VTDI, which have Public Sector responsibility for this type of work but have not focused on these activities in recent years. The Construction Industry has also been reoriented to the process and potential of the certification/registration/referral/placement process. Based on CRDC's proposed strategy for implementing the process, Industry is organizing to conduct the elements of the process which can be handled by the Industry itself. The results of the Industry's work will be used to meet immediate needs within the Construction Sector and to provide impetus and support to public institutions to move ahead with their policy making process.

CRDC' handling of actual referrals and placements is limited to a file of 800 former trainees of public agencies and participants in CRDC courses. The Centre currently handles five to ten requests each week from potential employers. Given resource limitations, however, the Centre has not actively marketed or attempted to otherwise expand these services.

EXISTING DEMAND FOR INCREASED LEVELS OF CRDC SERVICES

At the time of its inception, the CRDC, its founders, and early supporters were aware of the types of needs existing in the Construction Sector. What could not be accurately identified were the actual levels of existing need in the various activity areas and the potential for developing viable responses. This was, in fact, the stated intent of the Centre's first year. As noted in the CRDC proposal to USAID, "The initial twelve month project is essentially a pilot project aimed at establishing the Construction Resource and Development Centre and demonstrating through performance the potential that can be realized by the new Centre." Now after the first ten months of CRDC's achievement, a clear picture has emerged. CRDC has identified opportunities to make significant positive contributions to the improvement of the Construction Sector and related public institutions.

CRDC could respond appropriately to the demand if necessary resources were available to develop a strong organizational base from which the work could be conducted.

The increased levels of activity called for, consequent to identified demand, would not take the CRDC into broad, new areas of endeavour or change the basic role of the Centre. Levels of activity would increase only in terms of those task areas in which CRDC has demonstrated the ability to perform successfully. New tasks would be limited to those identified as being of substantial benefit to the Construction Centre and related public institutions. Once the demand in each area has been fulfilled, CRDC will actively market their capabilities to ensure sustainability. Specifically, CRDC resources need to be strengthened to conduct the following activities.

RESEARCH AND INFORMATION

Three closely-related types of research and information work have been proposed. These include sector-wide research studies, discreet studies for specific groups and a newsletter.

An initial study of the overall health/status of the Industry would be followed by periodically updated reports distributed within the CRDC network and to other pertinent interested groups, such as Government Financial Institutions, etc. The study and updates would include the following indicators:

- o Labour utilization and deployment rates
- o Employment levels
- o Cost indices
- o Changing trends in construction methods
- o New technology and materials
- o Productivity rates
- o Volume and types of projects coming on line
- o Methods and levels of available financing
- o Levels of credit accessed by the Sector
- o Construction plant in country and related costs
- o Plans for industrial/commercial building expansion

An indicator for Industry's support for this work is found in the fact that a cross-section of Construction Industry Associations, major firms and individuals have had several meetings on this issue to establish Industry-wide support for the work, identify CRDC as the preferred organization to conduct the work, provide further detail on information requirements, and agree to finance the first study to be completed by early 1985.

Individual construction associations and firms have approached CRDC with requests to perform studies specific to the needs of their groups. A sample of these requests includes:

- o A study of home buyer preference and financing capability - conducted for a group of private contractors.
- o A study of the types and volume of work performed by Jamaican versus expatriate firms - conducted for a private firm of Architects and Planners.
- o A comparative study of Public/Private Sector design costs - conducted for a group of Consulting Engineers.
- o A study of cost indices regarding current construction labour, material and building types - conducted for a group of Quantity Surveyors.

The pertinent information collected and analyzed by CRDC, based on Industry demand, would be distributed within the Sector and to related interested groups through a newsletter published on a regular basis.

TRAINING

CRDC has produced and presented four specialist and two basic courses to date. Nine others are in development for presentation in 1985. Other requests are being explored. This work represents levels of activity going well beyond initial expectations and resources which called for identification of needs.

Existing demand is responsible for the early over-achievement in this area. Courses to date have been over-subscribed. Potential participants have been turned away because of a lack of space and/or materials.

The list of courses to be presented in 1985 is provided below. Additional courses will be added to the list when the need and potential impact of each has been thoroughly explored and defined. CRDC will continue to avoid duplication of effort in its course work.

Courses which are found to be appropriate for use in the curriculum of Public Training Institutions will be turned over to them. CRDC will maintain its focus on adult members of the construction work force, who are in need of training for purposes of upward mobility and improved Industry efficiency.

PLANNED COURSE LIST FOR 1985

Electrical Installation and Maintenance Upgrading
Plumbing and Drainage Maintenance Upgrading
Refrigeration and Air-conditioning Maintenance Upgrading
Blueprint Reading and Plan Interpretation
Costing and Estimation
Site Layout Techniques
Structural Techniques for Improving Safety in Vernacular Housing
Sanitary Installation and Maintenance
Basic Building Skills for Women
Project Planning and Scheduling
Project Management
Foreman/Supervisor Upgrading
Construction Culture and Terminology
Construction Technology-based Literacy Training
Project Development and Management

SPECIAL PROJECTS

In addition to the Women's Construction Collective, the CRDC has nearly completed arrangements on two other projects of importance to the Construction Sector. These two new projects are summarized as follows:

- o A study of the methods and technologies and costs involved in using bauxite waste for producing tiles and/or other construction materials, to be conducted in conjunction with the University of the West Indies.
- o A study of the status of Jamaican "vernacular" structures and their ability to withstand natural disasters. Building Inspectors, contractors, homeowners, and other pertinent individuals and groups will be trained in the application of procedures to reduce the effects of natural disasters such as hurricanes. This project would be conducted in conjunction with the Office of Disaster Preparedness.

Other possibilities exist in terms of potentially-beneficial projects. However, CRDC has not had the resources available to explore actively the need in this area. A stronger organizational base would permit the necessary exploration, facilitate the conduct of projects which would benefit the Construction Sector and the community, and provide income to the Centre to ensure its continuity.

REFERRAL AND PLACEMENT

Although no marketing has been conducted, CRDC currently receives five to ten calls per week from employers and craftsmen requesting assistance in the referral and placement of qualified individuals. The Centre has been basing its responses on a file of 800 trained craftsmen. The file is maintained manually. Under such circumstances, expansion of the file and timely responses to requests are not possible.

Strengthening CRDC's ability to respond to such requests would allow for the development and marketing of a truly viable referral and placement service focused on the Construction Industry. CRDC would also be able to comply with requests from the Public Sector with effective linkages between their referral/placement efforts and the Construction Industry. The HEART Programme has already begun to work with CRDC in this manner. The College of Arts, Science and Technolgy (CAST) has recently made a similar request.

The certification and registration of craftsmen is a part of this process and is the subject of continuing interest in the Construction Industry. Strengthening of the CRDC would permit advances in this area through the conduct of pertinent work within the Construction Sector. Industry-based work would, in turn, facilitate decision-making within related public institutions and enhance the development of truly productive linkages between Public Sector institutions and the Construction Sector.

LIAISON/COMMUNICATION

Appropriate responses to specific demands for CRDC work would imply a significant increase in the liaison/communication aspect of the Centre's activities as related to all fields of endeavour. Strengthening the Centre would not only allow for an increase in the Centre's productive contacts but would also provide additional opportunities which would benefit the Private and Public Sectors.

An example lies in CRDC's participation in the recent initiative to bring together the cross-section of Private Sector groups in an effort to improve data systems development and information exchange. Groups involved in this initiative include the Jamaica Manufacturers Association, Small Business' Association, Jamaica Tourist Board and the PSOJ.

Public institutions such as the Planning Institute of Jamaica have also expressed interest in a closer liaison with CRDC with particular focus on using detailed data on the Construction Industry to complement their work which is conducted on a macro basis.

**CRDC DEVELOPMENT PLAN TO RESPOND TO DEMAND:
ANTICIPATED BENEFITS, DEMONSTRATED CAPABILITIES**

The CRDC plan to strengthen its capabilities in response to demand for increased services follows current successful initiatives, maximises demonstrated capabilities and retains the Centre's original role.

The Centre's development requires additional resources in the big activity areas and a parallel increase in organizational support activities such as administration and bookkeeping.

The majority of activities regarding CRDC's development and the related investment in resources needs to take place during the next twelve months to permit a timely response to identified opportunities. Once the organization has been strengthened and each activity area is brought into full production, CRDC will be able to take advantage of existing opportunities and actively market their services to generate future income.

Consequently, the need for financial assistance from USAID is planned to drop sharply in the second year and terminate completely after 36 months.

The development plan is summarized below and includes examples of demonstrated capability and anticipated benefits in each area. Detailed budget, job descriptions and an implementation plan are provided later in this document along with a statement of the sustainability of the effort.

RESEARCH AND INFORMATION SERVICES

The strengthening of CRDC capabilities in this area will focus on three specific elements including data processing, research and communications.

1) Data Processing

In the past, the organization and processing of data for research studies and referral placement has been handled manually.

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The planned increase in data processing work would be handled by a small computer section in CRDC using two mini computers to process efficiently the full range of data flowing through the Centre, for use in the management of the Centre and for producing research reports and related information for the Centre's membership and public.

The data processing work would be done by two staff members with strong previous experience in the field.

- Systems Analyst Programmer: to develop the necessary information gathering, processing and distribution systems and programme the computer accordingly;
- Data Processing Clerk: to conduct standard data input/output tasks, operate the computer system on a daily basis and process referral/placement requests.

RESEARCH

The existing research section in CRDC would be expanded in response to demonstrated opportunities. The work of this section would be facilitated by the computer system and computer personnel. Two staff members would focus on the research work.

- Senior Research Officer: would be responsible for the design and validation of research work, establish internal CRDC systems and guide the research process itself;
- Research Officer: would conduct the work on a day-to-day basis with the participation of research assistants hired on short-term basis to implement specific studies.

INFORMATION DISSEMINATION

CRDC would focus efforts in this area to provide for a periodic newsletter, improved flow of ad hoc information to members and public, contact with the general public, and control of all CRDC publications and documents. The work would be handled by one staff member.

- Communication Officer: would be responsible for the production of a regular newsletter, contacts with Industry and Government regarding information available through CRDC, production and quality control of research reports and other documents originating within CRDC, contacts with the public regarding information on CRDC and the Construction Industry. This staff member would also assist with product marketing and CRDC liaison activities.

As described earlier in this document, CRDC has already demonstrated the capability to conduct the types of research and information work required in the Construction Sector. The Centre has also won the support of Industry by demonstrating impartiality and confidentiality of information. The Centre has also demonstrated characteristics which would enable a rapid and efficient increase in activity levels. These are:

- o Knowledge of pertinent information sources and users at both individual and organizational levels;
- o Knowledge of Industry characteristics, methods and personnel; and
- o Knowledge of information systems and research methods.

The benefits which would be provided to both the Private and Public sectors from expanded research and information activities are significant and include:

- o Improved efficiency in the Construction through better planning, organization and communication based on timely, detailed and accurate data.
- o Improved co-ordination and communication between the Industry and Public Sector training, research and planning institutions. For example, CRDC would continuously provide data and assistance to the HEART Programme, CAST, PIOJ, Ministry of Labour, Ministry of Construction, etc. These relationships would be conducted on the basis of fact rather than simply emotion or personal/group interest.
- o Improved efficiency in the Construction Sector based on timely and accurate identification and recruitment of appropriately qualified personnel and craftsmen.

- o Improved data-based co-ordination and communication with other Private Sector groups such as the PSOJ.

TRAINING

Response to the rapid increase in identified training needs requires the addition of one staff member to focus entirely on continuing the important advances introduced by CRDC in the development of an improved manpower pool for the Construction Sector and related co-ordination efforts with public institutions.

Human Resource Development Officer - to continue the process of training needs/manpower analysis, produce specific courses, co-ordinate training with public institutions and work with Industry and Government to implement CRDC's strategy for certification, registration, referral and placement of Construction Industry craftsmen and supervisory personnel.

CRDC has demonstrated its ability to work in this area through the conduct of needs analysis, course development, presentation and evaluation and co-ordination with Public Sector Training institutions. The necessary methods and procedures are already in place and will be maintained.

The benefits which will flow from the expanded human resource work include:

- o Improved Construction Industry employee performance through properly targeted training.
- o Implementation of a well-defined avenue of upward mobility from adult employees.
- o Improved efficiency in the Construction Sector through effective recruitment and hiring priorities made possible by the implementation of the CRDC strategy for certification/registration/referral/placement.
- o Improved efficiency of Public training institutions through better allocation of resources based on CRDC-furnished data.

SPECIAL PROJECTS

CRDC plans to continue its efforts with the WCC and begin work on at least two other special projects described earlier in the report. Expansion in this

area would be facilitated by planned improvements in research and information services, training and administration. The conduct of the WCC and added special projects would be handled by one staff member.

Special Projects Officer - with responsibility for the continued operation of the WCC and other activities which have identified potential to benefit the Construction Industry and related public. The activities required in the conduct of these projects are not confined to either training or research/information but cut across the line of established activity areas.

CRDC has demonstrated its ability to conduct projects of this type through its work with the highly successful WCC.

The types of benefits which would result from this work vary and are a function of the specific nature of each project. A sample of the range of anticipated benefits can be drawn from the three special projects CRDC would operate in 1985 and would include the following:

WCC

- o Career opportunities for unemployed women.
- o Improved efficiency in construction sites through employment of capable craftswomen and reduction in site violence/lost time.
- o Alternative model for women's development for international dissemination.

Bauxite Waste Reclamation Project

- o Development of local industry/jobs through production of low cost local construction materials.
- o Lowered construction costs through use of local materials.
- o Savings in foreign exchange.

Reducing Effects of Natural Disasters on Housing

- o Reduced dislocation of citizens and lower housing repair costs after natural disasters (floods, hurricanes).
- o Training of personnel/community workers in Disaster Mitigation methods.

ORGANIZATION/ADMINISTRATION

The productive elements of the CRDC will need to be provided with appropriate organizational/administrative support so as to permit staff to focus on their specific tasks and avoid the loss of time and energy resulting from CRDC's current "hand-to-mouth" mode of operation. The lack of resources, sufficient to permit an appropriate task focus and facilitate the establishment of a sound organizational base, has been a critical problem at CRDC to date. The inputs required to address the situation are needed on the "front end" of the CRDC development process. With the assistance of USAID funding CRDC would be able to develop the organizational base and pertinent systems which would permit the Centre to act on identified opportunities and achieve self-sustainability in a short period of time.

The Centre's approach to developing a sound organizational base and administrative support capability calls for the provision of adequate office equipment and supplies, improvement of the current facility, staff development, and low level administrative support personnel such as secretaries and a messenger. These requirements and costs are detailed in the budget and staffing pattern provided later in this document.

Key support activities such as office management/administration and bookkeeping would be provided by the addition of two staff members.

An Administrator would be hired to establish and supervise internal CRDC procedures for the management of grants and other resources and office activities.

An Accounts Clerk would be hired to assist the Administrator and handle the day to day tasks involved in financial administration.

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An important aspect in strengthening the CRDC is staff development. Staff training is critical to co-operation, communication and growth within the organization. Particularly important will be the training of staff in relation to the computerization process. Two types of training will be required. First is the technical training in computer operation, capabilities and maintenance normally provided as part of the computer sales package. Second is the computer familiarization training for staff who will not operate the computer but do need to learn to integrate their activities effectively with the computer team. Staff must be able to demonstrate, through performance, a knowledge of what is required of them and what they extract from computer operations.

During the process of strengthening the CRDC organization base, the role of the Director would shift from that of "jack-of-all-trades" to a focus on the general supervision of the organization with particular emphasis on liaison and marketing tasks.

The CRDC Board of Directors and Trustees would also be slightly modified. New participants would be selected from the Construction Industry, Private Sector organizations such as the Bankers Association, and Public Training Institutions to reflect expanded activities and increase the Centre's potential for liaison, communication and co-ordination through the CRDC network.

CRDC has demonstrated the ability to manage the types of resources involved in increasing activity levels. Use of the added resources would build on the viable administrative/accounting procedures already in place at

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the Centre. Complex "new" systems and procedures would not need to be developed. CRDC's current difficulty stems from the volume of work at hand, not the complexity of the tasks themselves.

Benefits from increased levels of administrative support include:

- o Smooth operation of internal systems and procedures
- o Timely and accurate accounting and grants management
- o Opportunity to focus functional staff on their specific tasks
- o Establishment of a strong organizational/administrative base for the conduct of future activities leading to self-sustainability
- o Improved administrative performance to facilitate enhanced liaison/communication/co-ordination with outside groups through timely and accurate reporting and documentation

CRDC GOAL STATEMENT

To fully strengthen and develop CRDC capabilities so as to ensure organizational stability and enable the Centre to:

- Contribute to the establishment of a well-developed and trained work force for the Construction Industry;
- Provide a strong Construction Industry-oriented data base to serve as a basis for improved Industry planning, operation, communication and co-ordination;
- Promote communication, co-operation and co-ordination between the Construction Industry and other pertinent organizations in the Private and Public Sectors.

CRDC OBJECTIVES 1985

Organization Development Objectives

- 1) Complete recruitment and hiring process by October;
- 2) Modify existing facility and complete office equipment purchase by October;

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- 3) Expand Board of Directors/Trustees by April;
- 4) Set up and test computerized information and complete initial staff training by October;
- 5) Complete development of CRDC operating procedures and systems for the conduct of service activities by December; and
- 6) Generate a minimum income of J\$170,000 by December.

SERVICE OBJECTIVES

- 1) Conduct first research study on the Construction Industry's status/health by April;
- 2) Conduct at least six new training programmes by December;
- 3) Conduct one special project in addition to the WCC by December;
- 4) Produce and disseminate first newsletter by December;
- 5) Revalidate consensus on CRDC strategies for Basic Trades Training, Supervisory Training and Certification/Referral process by December.

CRDC OBJECTIVES 1986

Organizational Development Objectives

- 1) Conduct drive for expanded paid membership
- 2) Complete an evaluation of CRDC progress and status and revise as necessary;
- 3) Complete internal development process and reach full production capacity;
- 4) Generate a minimum of J\$335,000.

Service Objectives

- 1) Conduct a minimum of two research projects
- 2) Present a minimum of eight non-duplicative courses;
- 3) Publish four newsletters
- 4) Conduct two additional special projects;

- 5) Complete work elements of Certification/Referral process conducted by Private Industry. Refer Products to pertinent Public Institutions

CRDC OBJECTIVES 1987

Organizational Development Objectives

- 1) Conduct full scale marketing of CRDC capabilities and services
- 2) Reach full sustainability by December
- 3) Generate minimum income of J\$650,000.

SERVICE OBJECTIVES

- 1) Conduct a minimum of three research studies;
- 2) Present a minimum of twelve non-duplicative courses;
- 3) Conduct three special projects;
- 4) Publish a minimum of four newsletters; and
- 5) Begin to conduct Certification/Referral process on full-scale/paid basis.

CRDC'S PROPOSED STAFFING PATTERN

ADMINISTRATION/MANAGEMENT

Director
Executive Secretary
Administrator
Accounts Clerk/Typist
Messenger
Office Attendant/Sweeper

RESEARCH SECTION

Senior Research Officer
Research Officer
Research Assistants (short term/by projects)

HUMAN RESOURCE DEVELOPMENT

Human Resource Development Officer
Secretary/Typist (shared with Research Section)

SPECIAL PROJECTS

Special Projects Co-ordinator

COMMUNICATIONS

Communications Officer
Secretary/Typist (shared with Special Projects)

COMPUTER SECTION

Information Systems Analyst/Programmer
Computer Operator (key board)

CRDC'S OPERATING BUDGET 1985 - 1987
(U.S. \$'000)

		1985	1986	1987
Personnel	USAID	97.91	108.00	50.00
	CRDC	10.00	13.00	68.00
	TOTAL	107.91	121.00	118.00
Facilities (rental of office and training space)	USAID	7.20	7.20	-
	CRDC	-	2.00	10.00
	TOTAL	7.20	9.20	10.00
Office Equipment	USAID	39.25	-	-
	CRDC	-	4.00	6.00
	TOTAL	39.25	4.00	6.00
Vehicles (purchase two maintain three)	USAID	14.05	-	-
	CRDC	15.00	8.70	6.00
	TOTAL	29.05	8.70	6.00
Legal and Auditing	USAID	1.00	1.00	-
	CRDC	-	1.50	4.00
	TOTAL	1.00	2.50	4.00
Postage, Printing (papers and binding)	USAID	1.00	1.00	-
	CRDC	-	3.00	6.00
	TOTAL	1.00	4.00	6.00
Computer (hardware, software, training)	USAID	20.00	3.00	-
	CRDC	-	2.00	7.00
	TOTAL	20.00	5.00	7.00

OPERATING BUDGET CONT'D

		1985	1986	1987
Staff Development	USAID	5.24	3.00	-
	CRDC	-	2.00	7.00
	TOTAL	5.24	5.00	7.00
Staff Travel	USAID	-	1.60	-
	CRDC	-	3.00	6.00
	TOTAL	-	4.60	6.00
Resource texts and journals	USAID	2.00	1.00	-
	CRDC	-	4.00	4.00
	TOTAL	2.00	5.00	4.00
Tools and protective gear (site visits/demonstrations)	USAID	-	-	-
	CRDC	-	2.00	1.00
	TOTAL	-	2.00	1.00
Technical assistance (information systems/computer)	USAID	12.00	-	-
	CRDC	-	10.00	10.00
	TOTAL	12.00	10.00	10.00
Audio-visual equipment	USAID	5.35	1.00	-
	CRDC	-	3.00	5.00
	TOTAL	5.35	4.00	5.00
Equipment maintenance and insurance	USAID	2.00	2.00	-
	CRDC	-	2.00	6.00
	TOTAL	2.00	4.00	6.00
YEARLY TOTALS		232.00	189.00	196.00

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NOTE: Personnel costs for 1985 reflect the anticipated schedule of staff recruitment and hiring shown on the following page.

CRDC STAFFING

ANTICIPATED START DATES OF NEW PERSONNEL, 1985

<u>POSITION</u>	<u>START DATE</u>
Administrator	February
Accounts Clerk	March
Messenger	February
Senior Research Officer	March
HRD Officer	June
Secretary/Typist	May
Special Projects Co-ordinator	August
Communication Officer	September
Typist	October
Computer/Programmer Analyst	March
Computer Operator	May

NOTE: New staff will be hired on a long-term consulting basis which will reduce personnel costs by ten percent and facilitate changes in staffing later in the project if needed.

IMPLEMENTATION PLAN - 1985 - 1986

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ACTIVITY	1985												1986												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
Proposal review and funding	-----																								
Conduct recruitment and hiring of staff		-----																							
Continue current liaison communication activities	-----																								
Conduct first research study on industry health status (small scale, non-computerized)		-----																							
Purchase office equipment		-----																							
Conduct training programs now in development		-----																							
Expand Board of Directors, Trustees to reflect wider range of clientele		-----																							
Repair, expand current facility		-----																							
Receive technical assistance for info systems/computer, using industry study as basis for info detail and format		-----																							
Purchase and install computer equipment			-----																						
Set up and test early elements of computerized information systems						-----																			
Conduct computer technology and familiarization training for staff (2 different courses)					-----																				

IMPLEMENTATION PLAN - 1985 - 1986

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ACTIVITY	1985												1986											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Prepare and conduct staff development conferences (team building and communication regarding expanded activities and implications for CRDC organization)						---					---													
Strengthen CRDC internal operating procedures & systems for specific activity areas (e.g. research, HRD, communications, etc.)		---									---													
Begin process of regular data collection, analysis and computerization								---				---												
Prepare and disseminate first newsletter										---		---												
Secure and conduct selected research and special projects. Conduct marketing on limited basis to ensure CRDC-needed time for internal development										---		---				---								
Strengthen and expand liaison communication process based on strengthened systems/expanded capacity												---	---											---
Validate consensus on CRDC strategies on Basic Trades training, Supervisory training & Certification/Referral process										---		---												

SUSTAINABILITY

The potential income for each area of expanded CRDC activity has been analyzed, based on current realities. As demonstrated in the discussion and cash flow table which appears below, the Centre will be able to generate income sufficient to cover recurring costs at the end of the 36 month period following the provision of required resources. In fact, the major portion of recurring costs will be covered by income generated by the Centre's work after the second year. Income generated during the next twelve months will be held and used to cover second year operating costs where these exceed the funding requested from USAID.

It is important to note that CRDC is not asking USAID to fully finance the Centre's operation over the next three years. USAID input would be primarily used during the next twelve to eighteen months to permit the Centre to strengthen itself so as to take maximum advantage of opportunities already identified. Once the "front-end" costs are covered to permit the addition of resources needed for the Centre's development, staff can move into production and place the functional elements of CRDC on a paying basis.

CRDC - ANTICIPATED REVENUES AND SOURCES, 1985 - 1987

TRAINING

In addition to courses presented to date, CRDC has nine others either in the development or request stages. This is after only ten months of operation. These additional courses will bring the number of available programmes to twelve within the next six months. It is not unreasonable to assume that over the next three years a total of twenty five courses will be developed. At least fifteen courses will be presented by CRDC on a regular basis. Potential income is estimated at J\$5,000 per course or J\$45,000 annually. Current course income is displayed on the table below.

BUILDING MAINTENANCE

	J\$
Income	16,800
Costs	<u>7,800</u>
Profit	9,000
	=====

BLUEPRINT READING

	J\$
Income	5,250
Costs	<u>1,495</u>
Profit	3,791
	=====

SUPERVISORY TRAINING

	J\$
Income	4,900
Costs	<u>2,327</u>
Profit	2,573
	=====

RESEARCH AND INFORMATION

CRDC has requests for research work on hand - one study to be updated periodically on the Industry's status/health and four studies for specific groups. Given the types of work at hand and the fact that marketing has yet to begin in this area, it is reasonable to assume that five or six similar assignments would eventually be secured each year.

An informal survey of local research establishments with no relation to the Construction Industry reveal that a three month study, such as CRDC performed for HEART, costs approximately J\$200,000. Assuming that CRDC offers its members preferential rates, greater efficiency through the use of an established Industry-oriented data base, and that research work will vary in required time and complexity, the Centre projects an average income of J\$100,000 per study, or J\$500,000 to J\$600,000 per year after full production/marketing.

MEMBERSHIP DUES

The increasing reputation and productivity of CRDC has carried with it an increase in interest in membership among Industry Associations, private firms and individual entrepreneurs. Comments made by interested parties during discussions regarding membership and actual membership costs in similar local organizations suggest the rate structures presented below.

Industry Associations	J\$5,000 - 10,000 per year
Private Firms	500 - 10,000 per year
Individual Contractors	250 - 5,000 per year

Assuming that CRDC actively markets membership and provides appropriate incentives such as preferential rates in training courses and seminars, discounts on research work and referrals of craftsmen, complimentary

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newsletter and advi.ories, etc., it is quite likely that income from dues will flow as indicated below.

Industry Associations	10 @ J\$7,000 p.a.	J\$ 70,000
Private Firms	20 @ J\$2,500 p.a.	50,000
Individual Contractors	30 @ J\$ 300 p.a.	9,000
Other Associations (Government, Finance etc.,)	(various)	<u>30,000</u>
		J\$159,000 p.a. (after three years)

SPECIAL PROJECTS

CRDC has attracted the attention of several local and international groups with interest in the Construction Industry and related community development activities. The Centre is actively cultivating such contacts as sources of current and future income. For example, CRDC has developed contacts with two international groups attracted by the success of the Women's Construction Collective. Both groups have expressed interest in financing the expansion of the WCC activities and assisting with the recurring costs of operations. Funding at a substantial level appears to be forthcoming within the next three months. This grant alone could assure WCC financial security over the next two years at its current level of expenditure.

The Grace Kennedy Staff Foundation, a local social welfare institution, has already provided a grant of J\$10,000 in support of CRDC's work with WCC and has expressed an interest in continuing the relationship.

Outside of the realm of benevolent activities, the CRDC has developed contacts with a cross section of local and international groups regarding funding for a

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variety of research and development activities such as the Bauxite and Disaster Mitigation work described earlier in this document.

Based on current discussions regarding levels of funding for ongoing activities in this area, the following annual income levels are projected:

	J\$
Grants for social/community development (construction oriented, e.g. WCC and Rural Low Income Housing)	200,000
Local social welfare/community development (Grace Kennedy Staff Foundation)	10,000
Special projects of interest to the Construction Industry (e.g. Bauxite Project)	100,000
Internationally funded construction oriented Resource and Development (e.g. dissemination of WCC model and Disaster Mitigation Training)	100,000
Contributions (\$/materials/equipment) by international construction associations (e.g. U.S. Association of General Contractors)	<u>50,000</u>
TOTAL PER ANNUM	J\$460,000 =====

CERTIFICATION/REGISTRATION/REFERRAL/PLACEMENT

CRDC now receives an average of five to ten contacts per week requesting assistance in the referral/placement process even though no marketing has been done in this area. Results so far have been good as indicated by feedback from contractors. Given the Industry's strong desire to end the chaos in the hiring process, CRDC's reputation for impartiality, confidentiality and competency plus its early initiatives in this area, and a lack of any other organization to play this role, it is not unreasonable to assume that the registration and placement process will become a reality within the next three years and that CRDC would be the organization of choice to deliver these services.

Since the Industry hires approximately 2,000 specialist workers directly and 18,000 indirectly at Grades III, II and I each year (based on Statistical Institute's Labour Force Survey and CRDC's Labour Utilization Subcontraction Rate), it is not unreasonable to assume CRDC would eventually play an active role in the hiring of at least 7,000 of these over time given the absence of any other respected industry source. This would provide an income of J\$105,000 based on a J\$15.00 referral fee once the system is set up two to three years. This fee was frequently mentioned by Industry contacts as an acceptable cost. A higher fee might be charged and this would be covered in each contractor's contract with the client.

A registration fee of J\$20.00 would be charged to each certified worker at the time their data is entered into the system. Assuming that CRDC dealt with only the top one third of the Construction Labour Force (the most highly skilled and trade school graduates) the potential client group would number

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approximately 15,000 and yield J\$300,000 in income when the full client group is reached. It is important to note that CRDC already has a file of 800 grade III candidates and these are only the recent HEART graduates and participants in CRDC's courses. CRDC would continue certification and registration at the trainee level and gradually expand once the certification registration system has been finalized and fully accepted.

CRDC
SUMMARY OF PROJECTED INCOME BY SOURCE 1985 - 1988

	1985	1986	1987	1988
Training Programmes	J\$ 30,000	J\$ 75,000	J\$ 100,000	J\$ 125,000
Research information	40,000	100,000	250,000	350,000
Membership Dues		50,000	70,000	150,000
Special Projects/ Grants (local and International)	100,000	110,000	210,000	275,000
Certification Registration Recruitment, Refer- ral			20,000	40,000
TOTAL	170,000	335,000	650,000	940,000

- NOTES:
1. Table assumes very gradual increase in production and does not project immediate and total realisation of all currently identified opportunities.
 2. Income generation is estimated conservatively to avoid shortfalls and resulting interruption of CRDC development.
 3. Income in 1986 and 1987 is expected to peak late in each year and will not obviate USAID contributions which will be needed to carry organisation through each period until earnings are actually in hand.
 4. Income for 1985 will be held for use in 1986 to cover operating costs where these exceed funding requested from USAID.

CRDC
CASH FLOW SUMMARY 1985 - 1988

	1985	1986	1987	1988
INCOME				
USAID	974,592	605,360	235,000	-
OTHER SOURCES	170,000	335,000 54,192*	650,000 106,252	940,000 70,052*
TOTAL	1,144,592	994,552	991,252	1,010,052
OPERATING COSTS	1,090,400	888,300	921,200	990,000
AVAILABLE INCOME	54,102*	106,252	70,052*	20,052

* amounts carried over

- FOOTNOTES:
1. Operating costs in 1986 will be lower than for 1985 since initial purchases for computers and other items such as audio-visuals and equipment will have been completed.
 2. Costs in 1987 are projected to increase 10% over 1986 due to inflation (6%) and increased CRDC activity (4%) as organisation moves into full swing and costs for telephone, transportation, printing copying etc., increase.
 3. Costs for 1988 reflect an increase of (6%) due to inflation.

A N N E X E S

JOB DESCRIPTION - CRDC PROPOSED PROFESSIONAL STAFF

POSITION:

DIRECTOR

RESPONSIBILITIES:

Overall supervision of the development and operation of CRDC. Establish policies and strategies for the Centre's growth and relationship with its clientele and public. Maintain close working relationships with the Centre's Board of Directors and Trustees. Supervise the development and implementation of procedures and systems to be used in the Centre's internal management and in the conduct of the Centre's work with its clientele. Assume special responsibility for the liaison communications and marketing aspects of CRDC's activities.

QUALIFICATIONS:

(as per current incumbent)

POSITION:

ADMINISTRATOR

RESPONSIBILITIES:

Manage the internal daily operations of CRDC under the supervision of the Director. Modify, develop, and establish systems and procedures for CRDC management operations. Manage grants, finances, and other resources of CRDC. Conduct the purchasing and supply activities of CRDC. Supervise the work of the bookkeeper and other members of CRDC administrative support staff. Participate in CRDC liaison and marketing activities.

QUALIFICATIONS:

University Degree in Management or related field.

Ten years Private Sector experience in office administration and financial management with five years in a supervisory position.

Priority is accorded for experience in grants management.

POSITION:

ACCOUNTS CLERK/BOOKKEEPER

RESPONSIBILITIES:

Assure timely and accurate recording of all CRDC's financial activities. Perform related clerical work including typing of financial reports as directed by the Administrator.

QUALIFICATIONS:

Professional certificate in Bookkeeping, Office Management or related field. Five years Private Sector experience in bookkeeping/accounts work. Typing 80 words per minute.

POSITION:

SENIOR RESEARCH OFFICER

RESPONSIBILITIES:

Design and supervise the testing and implementation of all CRDC research work. Write research reports for CRDC publication. Design and supervise policies, procedures and systems for the management of CRDC research work and for the analysis and presentation of data. Co-ordinate the collection and processing of research information with computer personnel to ensure the maximization of data storage and productivity over the short and long term. Participate in the marketing of CRDC products and capabilities. Participate in CRDC liaison and communications work with Government and Private Industry. Supervise the work of the Research Office and Research Assistants.

QUALIFICATIONS:

Advanced University Degree in research of related work.

Ten years of Private Sector experience in the design and conduct of research work and report writing. Experience with computer-operated data processing in management research activities required.

Excellent written and oral communications skills are required.

Three years of supervising experience is preferred.

POSITION

RESEARCH OFFICER

RESPONSIBILITIES:

Assist in the development and design of CRDC's research work and implement research projects under the supervision of the Senior Research Officer. Co-ordinate the activities of the Research Assistants hired on a short term basis to conduct field work for specific projects. Write research reports. Participate in CRDC liaison, communication and marketing activities.

QUALIFICATIONS:

University Degree in research-related work is required.

Advanced University Degree is preferred. Five years of experience in the conduct of increasingly complex research work is required. Private Sector experience is preferred. Prior experience with computer-assisted research work is preferred.

Excellent written and oral communication ability is required.

POSITION:

HUMAN RESOURCE DEVELOPMENT OFFICER

RESPONSIBILITIES:

Design and conduct analysis of needs for manpower development and training on sectoral and trade/task specific levels.

Prepare training and development strategies. Develop curriculum materials and training programmes which are performance-based and Industry-oriented. Evaluate training curriculum, materials and courses. Co-ordinate CRDC HRD work with pertinent Public and Private Institutions and groups. Work with Industry and Government to perfect and implement CRDC's strategy for the certification/registration/referral/placement process in the Construction trades. Co-ordinate and conduct CRDC specific activities regarding the certification /placement process. Participate in CRDC liaison, communication and marketing activities.

QUALIFICATIONS:

A University Degree in Human Resource Development or related field is required. Advanced University Degree with HRD specialization is preferred. Ten years of increasingly complex Manpower/Training work in Private Industry is required.

Excellent written and oral communication skills are required.

POSITION:

SPECIAL PROJECTS OFFICERS

RESPONSIBILITIES:

Organize, implement and manage a variety of special projects oriented to the interests of the Construction Industry and focusing on community development and/or the Industry and related technology. Write reports and grant documents. Co-ordinate special project activities with those of other CRDC sections. Participate in CRDC liaison, communications and marketing activity.

QUALIFICATIONS:

University Degree in Management or related field. Five years experience in programme development/management and/or grants administration, preferably with Private Industry. Excellent written and oral communication skills required.

POSITION:

COMMUNICATIONS OFFICER

RESPONSIBILITIES:

Production of the periodic CRDC newsletter and information bulletins. Development and supervision of policies and procedure for the format and quality control of all CRDC reports and documents. Information and public relations contacts with Private Industry, Government and the general public regarding CRDC and the Construction Industry. Conduct CRDC liaison and communications activities and participate in the marketing of CRDC's products and capabilities.

QUALIFICATIONS:

University Degree in Journalism/Writing or related field.
Eight years Private Sector experience in Public Relations and the production of newsletters, periodicals, or corporate communications. Excellent written and oral communications skills are required.

POSITION

INFORMATION SYSTEMS ANALYST/COMPUTER PROGRAMMER

RESPONSIBILITIES:

Development, implementation and management of CRDC's computerized information systems. Analyze and establish information requirements and presentation methods. Identify requirements and develop procedures for data processing and storage. Co-ordinate computer-assisted information systems with input/output capabilities and requirements of other CRDC sections and their clientele. Co-ordinate and conduct computer familiarization training for CRDC staff. Supervise the day-to-day data processing work of the computer operator. Ensure the security and regular maintenance of the computer system. Participate in CRDC communications and marketing activities.

QUALIFICATIONS:

Advanced University Degree in Systems Analysis/Computer Programming. Ten years of Private Sector experience in the design and operation of computer-assisted information systems, preferably with a focus on research, human resource development and/or financial management. Experience in training staff to interface effectively with computer operations is preferred.

POSITION:

COMPUTER OPERATOR

RESPONSIBILITIES:

Operate the CRDC computer system using computer programmes and procedures established by, and under the supervision of, the Analyst/Programmer. Conduct established data processing and storage routines.

QUALIFICATIONS:

Professional Certificate in Computer (keyboard) Operations.

Five years experience in computerized data processing.