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FEASIBILITY AND PLANNING STUDY OF INDUSTRIAL ESTATES

DP/GRN/85/005

GRENADA

Technical report: Findings and recommendations *

Prepared for the Government of Grenada
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

Based on the work of J.M. Gajewski and A. Jupe, UNIDO consultants

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ABBREVIATIONS AND CONVERSIONS

1. Abbreviations

GIDC	=	Grenada Industrial Development Corporation
CDB	=	Caribbean Development Bank
GDB	=	Grenada Development Bank
UNDP	=	United Nations Development Programme
UNIDO	=	United Nations industrial Development Organization
USAID	=	United States Agency for Industrial Development
ECCB	=	East Caribbean Central Bank
NDF	=	National Development Foundation
IPIP	=	Infrastructure for Productive Investment Project

2. Conversions

Length:	1 inch	=	2.54 cm
	1 foot	=	12 inches = 30.48 cm
	1 yard	=	3 feet = 91.44 cm
	1 mile	=	1,760 yards = 1,609.3 m
Surface			
Area:	1 sq.inch	=	6.45 cm ²
	1 sq.foot	=	144 sq.inches = 929 cm ²
	1 sq.yard	=	9 sq.feet = 0.836 m ²
	1 acre	=	4,840 sq.yards = 0.40 ha
	1 sq.mile	=	640 acres = 258.99 ha
Capacity:	1 quarter	=	8 bushels = 290.94 litres
	1 bushel	=	8 gallons = 36.368 litres
	1 gallon	=	4 quarts = 4.546 litres
	1 quart	=	2 pints = 1.136 litres
	1 pint	=	0.568 litres
Weights:	1 ton	=	20 hundredweight = 1,016.047 kg
	1 hundredweight	=	112 pounds = 50.802 kg
	1 pound	=	16 ounces = 453.59 g
	1 ounce	=	16 drams = 28.35 g
	1 dram	=	3 scruples = 1.77 g
	1 scruple	=	0.59 g
	1 grair	=	64.7989 mg
Electricity:			
	1 HP	=	0.746 kW
	1 kW	=	1.34 HP
Currency:			
	1 US\$	=	2.64 EC\$ (East Caribbean Dollar)

I. SUMMARY AND RECOMMENDATIONS

1.1. INTRODUCTION

Following an agreement signed on 20th September, 1985 between the Government Implementing Agency, the Grenada Industrial Development Corporation (GIDC) and the United Nations Industrial Development Organization (UNIDO), two experts were assigned on a short term mission to Grenada, to assist the Government in carrying out a pre-feasibility study on industrial estate development.

The detailed task of the mission has been defined in the Project Document DP/GRN/85/005/A/01/37 under the title "Feasibility and Planning Study of Industrial Estates". The area identified for such a study is situated at Frequente, St. George's.

Two UNIDO experts:

1. A Civil Engineer named in the Project Document "Engineer" and a
2. "Financial Analyst" arrived Grenada in June and August 86, respectively.

During the period between signing the Project Document and the arrival of the experts, the UNDP Office in Barbados received a letter from the Ministry of Finance in Grenada Ref. No. MF/64/47 dated 3rd April, 1986, stating that the original Project Document required some changes and additions. (See Appendix No. 6)

This was necessary because in the interim, a similar study was carried out by the Free Zone Authority Ltd., USA which was subsequently submitted to the Government. The UNIDO experts were therefore advised to identify another suitable area for the construction of an additional industrial estate. The area suggested in the letter was the old Pearls Airport.

The first expert to arrive was Engineer Angela Jupe on 27 June 1986. She prepared part I of the study report in compliance with the original terms of reference and the revisions suggested by the Government. Due to the delay in obtaining a land survey of the Pearls Airport she was unable to prepare a lay-out plan of the Industrial Estate.

The Financial Analyst J.M. Gajewsky, who arrived on August 13th, 1986, completed that part of the project (Part I), and prepared the second part (Part II) of the study, as stated in his revised terms of reference.

The revised terms of reference as per Project Document Revision I are in Appendix No. 7 of this report.

1.2. SUMMARY

1.2.1. The study assesses the present situation of industrial development in Grenada.

1.2.2 From available statistics, the authors estimated the demand and supply of industrial land and factory shells. On the basis of these statistics, there would be a shortage of 178,000 sq.ft. of factory shells for the period 1986 - 1990.

To cope with the problem, the authors propose the establishment of an additional Industrial Estate at the Pearls Airport area, in the parish of St. Andrew's. The location has been chosen in order to disperse future industrial construction away from St. George's, where two industrial estates are already nearing completion. The Pearls location will also tend to revitalise the area's economy which suffered after the closure of Pearls airport.

1.2.3. The proposed Pearls Industrial Estate will require financing in the amount of 7,000,000 EC\$ for the first phase, which will embrace the construction of 72,000 sq.ft. of factory shells.

1.2.4. The report analyses the rental level for pre-built factory shells. It proposes a rate of 9 EC\$ per sq.ft. for the first four years, of occupancy. This is to ensure a competitive rate in comparison with the rates of other countries in the region.

1.2.5. Tentative lay-out plans are given and a project evaluation is presented. Nine (9) acres of land should be developed in Phase I and a further 5.4 acres should be reserved now for future phases.

The project evaluation indicates that the rate of simple return on capital invested is 7.9% per year.

Other evaluation methods are also used. Calculation of investment effectiveness is presented. (See paragraph 3.14.)

1.2.6. Due to the severe lack of land suitable for industrial use, and the current unplanned method of selecting sites, it is suggested that industrial sites near to Sauteurs and Gouyave be identified and that areas of Tempe, Beausejours and St. Andrews be zoned for industry.

1.2.7. Several recommendations are suggested to Cabinet, relevant Government Ministries and Departments and to the GIDC.

Due to non-availability of certain information including a land survey for Pearls site the consultants prepared only a pre-feasibility study for the planning, construction and operation of the proposed estate.

1.3. RECOMMENDATIONS

1.3.1. A 5 - 10 year National and Regional Industrial Development Plan should be prepared to clearly define government policies and strategies for development.

1.3.2. Suitable sites for industrial purposes close to the main population centres should be urgently identified. On the identification of such sites they should be vested in the GIDC who should be given the responsibility for managing them. This is to avoid the unplanned development of such areas.

1.3.3. It is recommended that the Government establish a policy for the conversion of Pearls Airport into an Industrial Estate. In such a policy it should be stated whether or not the airstrip would be left open for possible future operation.

1.3.4. Either of the two selected sites presented in the report for the construction of the Pearls Industrial Estate should be designated for only that purpose (i.e. residential buildings should be disallowed in those areas).

1.3.5. Due to the remoteness of the Pearls Industrial Estate from St. Georges harbour and the International Airport at Point Saline, it is recommended that additional incentives be granted to prospective investors in order to encourage them to locate their enterprises at Pearls. It is suggested that a 50% reduction in the rental rate for a period of three (3) years should be granted to investors who wish to locate at Pearls Industrial Estate.

1.3.6. It is further recommended that the management of the two Industrial Estates (Frequente and Pearls Industrial Estates) be centralized within the GIDC under the Industrial Estates Manager.

1.3.7. Additionally, the administration of these Industrial Estates should be conducted from one of the sites, initially preferably from the Frequente Industrial Estate.

1.3.8. The manager of the Industrial Estates should be sent on a training course in order to familiarise himself with the management systems necessary for efficient operation of the industrial estates. The assistant manager should also be similarly trained. Such training courses should be attended in Ireland, which is the leader in industrial estates development worldwide.

1.3.9. There should be a unified rental rate for the GDB and GIDC Industrial Estates at Frequente.

1.3.10. On approval of this study, the Government is advised to approach industrial development institutions for long term, low interest loans or grants for the establishment of the proposed Pearls Industrial Estate.

1.3.11. In view of the proposed industrialization of the Grenville area, it will be necessary to establish a vocational and technical training center in the area. This would be a valuable source for the provision of skilled persons for industries located at Pearls and an added incentive to industries to establish in the area.

1.3.12. In view also of the lack of entrepreneurial skills in Grenada it is recommended that the Government seek assistance from UNDP/UNIDO to establish an Entrepreneur Development Programme to identify projects and to encourage local investors.

1.3.13. The installation of a computer within GIDC is recommended, in order to ensure efficient management of the Industrial Estates. Such a computer would provide the following services:

1. Preparation of monthly bills for the payment of rentals and the maintenance of an efficient accounting system.
2. Record of investors' applications for the establishment of industrial, tourism and other similar enterprises.
3. A computerized data bank should be established within the GIDC, of industries desirable for Grenada and for an investment promotion division to be set up to identify and actively pursue appropriate companies.

1.3.14. Suitable sites should be identified for the planning and construction of enterprise centres at Sauteurs and Gouyave.

1.3.15. Lands at Tempe, St. Andrew's and Beausejours should be zoned to encourage private enterprise development.

1.3.16. A standard lease agreement should be prepared for:

- a) Land and
- b) factory shells

1.3.17. A standard brief should be prepared for the layout of industrial estates and for the construction of factory shells.

1.3.18. An investment promotion brochure and video should be prepared for use by the GIDC.

1.3.19. An Industrial Liaison Committee should be established representing all the Ministries and organizations whose activities affect Industrial development.

II. BACKGROUND INFORMATION

2.1. PRESENT SITUATION OF INDUSTRIAL DEVELOPMENT IN GRENADA

The current year 1986, can be defined as a mile-stone on Grenada's path to industrialization. Industrial development as it occurred over the past decade had been random and unstructured. No industrial development plan or defined strategy existed, though fiscal incentives were available. Critical issues such as the mix of industries needed, the areas of the islands to be zoned for industry, and planned investment promotion policies had not been considered. Considerable progress has been made on the improvement of the country's infrastructure. This is essential in order to encourage faster industrial development of the island.

The international airport at Point Saline is now in full operation. It can accept large size aircraft for both passengers and cargo on a daily and nightly basis. Facilities for air transport of containers into and out of Grenada are available to serve local and foreign industrialists.

A USAID project has been approved for the reconstruction of seaport facilities at St. George's, so that larger passenger liners and commercial ships could be accommodated. The implementation phase of this project is expected to start shortly. At present, only 20' containers can be accommodated.

Two main roads in the country from St. George's to Grenville via Grand Etang and the Eastern Main Road are nearing completion. The St. George's to Grenville road repair Programme is being funded by USAID while the Eastern Main Road Project was financed by the European Development Fund (EDF). The Eastern main Road, being flat and longer can accommodate the transportation of 20 ft containers. The Grand Etang road on the other hand, is very steep and winding, and is therefore not safe for commercial use. Work on the roads to Sauteurs and Gouyave has commenced and is due for completion by the end of 1986.

The power supply in the country has been greatly improved by the installation of new generators at the Grenada Electricity Service. These new generators were sponsored by USAID.

The water supply in the St. George's area is limited. For Pearls Airport, while water reserves from the Mt. Horne reservoir are adequate according to the Water Commission, 2,000 ft of 4" pipeline must be installed in order to provide the Pearls Industrial Estate with water for industrial use. The present supply pipe is only 1" in diameter.

Only one area in the country has been zoned as a location for the construction of industrial estates. This area is located at the southern end of the island and with the exception of the USAID "CDB" funded sites the land is in private ownership. The area of land is 118 acres. While the advent of this first land use (zoning) map in Grenada is welcomed this will have the effect of further concentrating industrial development in the south-western part of the island to the detriment of other areas of the country. Investors who seek land for industrial use will tend to settle for that which is easiest available rather than try to obtain approval elsewhere for lands not yet zoned. This state of affairs has caused industrialists to build factories on their own plots of land throughout the country without taking into account the impact on the surrounding housing areas or other industrial or social activities.

Shortage of industrial land and lack of pre-built factory shells are considerable obstacles to Grenada's industrial development.

As a necessary step to improve this situation, it is proposed that the Government implement a policy of locating industries in specific industrial zones or industrial estates.

In February, 1985, the Government established the Grenada Industrial Development Corporation (GIDC), a statutory body funded by the Ministry of Finance. The GIDC is governed by a Board of Directors representing both private and public sectors. Its role is to encourage investment promotion and to promote industrial and tourism development in Grenada. The GIDC will have the responsibility for managing and maintaining the public sector Industrial Estates and Zones. It will allocate factory space and facilities for manufacturers, as well as collect rentals.

Concessions are available to industrialists under the Fiscal Incentives Act, 1974, as follows:

1. Waiver of duties and taxes on the importation of plant, machinery, equipment, spare parts and raw materials;
2. Tax holiday up to 15 years depending on the amount of local value added;
3. Exemption from income tax on export profits, and

under the Investment Code Incentives Law, 1983:

1. Waiver of any withholding tax payable;
2. Repatriation of capital invested in the investment;
3. Waiver of any licence fee payable under Aliens Land-Holding Regulation;
4. Increase in the percentage allowed for depreciation on plant and machinery legislated for by the Income Tax Law 1980.
(For details see related Act and Law).

In 1984, accepting the importance of planning Grenada's industrial development, the Government approached the Caribbean Development Bank for funding of an Industrial Estate. The project is now being executed by the Grenada Development Bank (GDB) and entails the construction of factory space at Frequente, St. George's (see 2.22).

Following another request, a USAID project has been approved for the construction of factory shells (see 2.22), also at Frequente.

In the same year (1984), the Government requested UNDP assistance to study the feasibility of establishing an additional Industrial Estate and the viability of an Export Free Zone. The related agreement was signed in September, and UNDP allocated funds at UNIDO for carrying out the present study.

The Government has noted that the concentration of all industries near the Point Saline Airport may result in exhausting the existing infrastructural capacity. To avoid that, the Government supports the idea of locating a new Industrial Estate at the old Pearls Airport which is sited in the parish of St. Andrew's.

The closure of the old airport at Pearls has caused severe unemployment problems for the people in the surrounding area. Specifically it has resulted in a decrease in most of the tourism related activities. The location of industries at Pearls, St. Andrew's will be in line with the policy of dispersing industrial production across the island and will ensure the economic revitalisation of Grenville and St. Andrew's as a whole.

Interest from foreign investors has increased with a sharp rise in inquiries during the first half of 1986. In addition, a number of local investors are restructuring operations or considering new or joint venture Section 936 projects for the export and domestic markets. However, cost of and difficulty in procuring financing is still causing delays with the latter.

While there is a definite air of optimism and interest prevailing, the majority of projects are still classified as "potential" rather than "actual" investment. Of 26 industrial projects approved by the Council in 1984, 6 have commenced and similarly of 59 projects approved in 1985, 32 have proceeded. Of these, 2 are producing for export and only 7 involve foreign investors.

2.2. REVIEW OF THE PRESENT PROGRAMME

2.2.1 The present programme to stimulate investment in industrial space and factory shells includes:

- the development of two industrial estates in the south-western area of St. George's and the construction of 103,000 sq.ft. of factory shells.
- the USAID infrastructure for Productive Investment Project (IPIP)
- the National Development Foundation
- the establishment of a new public sector agency, the Grenada Industrial Development Corporation (GIDC).

The programme of industrial estates development is concentrated at the south-western tip of the island at Frequente, approximately 2 miles from the new international airport of Point Salines and 4 miles from the centre of St. George's. Two industrial estates are under construction here on adjoining sites.

2.2.2 FREQUENTE INDUSTRIAL COMPLEX:

The site comprises 19.81 acres on the western side of the airport road. Nine of the original twelve structures on the site remain. Of these four have been reconstructed to provide usable industrial space.

These four are occupied by:

- Vantage Industries
- Viking Industries
- Grenada Investments Ltd.
- Spice Island Retreaders Ltd.
- Manufacturers of T-shirts 6600 sq.ft.
- Processors of dairy produce and fruit juices 5775 sq.ft.
- Manufacturers of aluminium louvre windows 4800 sq.ft.
- Tyre retreaders 4800 sq.ft.

A further four buildings, each of 4800 sq.ft. are in poor condition and would require extensive renovations in order to render them suitable for industrial use.

The remaining building is occupied by the police though this is due to be vacated within a year when the site is ready for occupation by investors.

The new factory shells proposed for the site include:

- 1 unit of 27,000 sq.ft. (allocated to Windward Industries Ltd. subcontractors to Johnson & Johnson US) for the manufacture of surgical headgear.
- 2 units of 21,000 sq.ft. (1 unit reserved for Smith, Klein & Beckman)
- 1 unit of 15 000 sq.ft. (reserved for Abbot Laboratories)
- 3 units of 12,000 sq.ft.

Of these one 27,000 sq.ft. unit, one 21,000 sq.ft. and the 15,000 sq.ft. unit (total 63,000 sq.ft.) are due for completion by October 1986. The contractor is Morrison Knudsen International of the U.S.

The shells will be of steel portal frame construction with plastic/acrylic coated metal deck side sheeting and roof. Floors will be concrete slab. Each unit will be served by it's own septic tank and soakway.

A 6" feeder water main will supply the site. Existing water supply to the area is unreliable and subject to disruptions during the dry season (February to May). The Water Commission has gauged shortfall in 1984 to all consumers including domestic, tourist and industrial in southern St. George's, Grand Anse, Lance-Aux-Epines area as 1 million imp. gals. A new 400,000 imp.gal. storage tank will be operational by the end of August 1986 which will assist in eliminating the shortfall.

However, should the total demand for 1987 be in excess of an extra 250,000 imp.gals. disruption may occur. Factors likely to effect this demand would be a much increased level of demand in tourist and domestic usage or an industry requiring heavy water usage. At present this demand seems unlikely but recognition and planning for the potential problem for 1988 needs to be addressed.

USAID propose to erect a 250,000 US gal. storage tank on the Frequente site in 1987 subject to funding being approved.

Electricity will be supplied to the site via two take-off points from the 11 KVA line on the airport road. Two transformer stations will be erected each side of the site and power supply taken over-ground to each unit. It will be the responsibility of each user to convert the supply to serve his needs.

The new digital telephone exchange is due to become operational by November 1986 with outside line work to be completed by November 1987. Each user will arrange for connections for his own supply.

2.2.3. CDB/GDB COMPLEX:

This estate, which is being financed by the CDB through the GDB occupies 5 acres site on the north eastern side of the Frequente site. The site is owned by the Government of Grenada.

The project involves the provision of 40,000 sq.ft. of factory shells in the following modules:

- 1 unit of 12,400 sq.ft. presently under construction and due for completion by October 1986.
- 1 unit of 6,400 sq.ft.
- 2 units of 9,600 sq.ft.

None of the units are reserved.

Each shell will be of steel portal frame construction with 6" infill concrete block walls. Profiled steel sheeting will be used for the roof.

A 3 phase electrical supply will be taken by underground conduit to each unit, linked back to an electrical kiosk on the site. Water supply will be via feeder from the 10" road main. The same comments regarding future supply applicable to the Frequente complex are relevant here.

Telephone connections will be the responsibility of the individual user. Sewerage disposal will be by individual septic tank as at Frequente. Main access to the site will be from the Frequente Road which will be upgraded. At a later stage in the development a new entrance/exit will be provided on the north-eastern boundary.

2.2.4 THE IPIP PROGRAMME:

The USAID Infrastructure for Productive Investment Project (IPIP) has channelled funding through the ECCB and the Commercial Banks to provide loans to the private sector to construct factory shells or industrial parks.

Initially substantial interest was generated among local investors. A survey recently undertaken among a random sample of local investors indicates a strong preference to own their own site and buildings rather than lease land and premises. Such ownership provides much needed collateral to secure further borrowings.

To date only one investor has applied for loan facilities to construct 20,000 sq.ft. of factory space at Tempe for his own use. He is awaiting final approval of his application (it appears likely approval will be granted).

A Trinidadian investor is awaiting loan approval for a project to produce prefabricated housing panels at Westerhall. The factory space at Westerhall is almost complete.

Reasons given by investors for lack of interest in IPIP include:

- unwillingness of the commercial banks to offer loan disbursement though their risk is negligible;
- high level of collateral sought by commercial banks the cost of which investors cannot meet;
- fears of investors that the EC\$ may be devalued during the period of the loan repayment, thus exposing them to US\$ currency exchange risk. This is a common business risk with which Grenadian investors are as yet unfamiliar.

The Government has no declared policy on sale of land for industrial purposes. However, previous experience indicates an unwillingness to sell Government lands and leasing has been preferred. This causes problems for local investors to whom ownership of land would provide means of collateral when seeking investment funding.

2.2.5. THE NATIONAL DEVELOPMENT FOUNDATION:

The National Development Foundation offers loans to small scale private investors. The loan ceiling is 20,000 EC\$ and to date over 200 loans have been disbursed. The NDF has discretion to lend without seeking collateral if it perceives the project to justify the additional risk. It is hoped shortly to raise the ceiling to 40,000 EC\$ as the present level is too low for many investors.

2.2.6. PROBLEMS OF THE PRESENT PROGRAMME:

The manufacturing sector is heavily oriented towards supplying the domestic market since Trinidad and Tobago imposed exchange controls which effectively curtailed the growing garment export market to these islands. In 1984 the value of garment exports dropped to US\$ 526,000 from US\$ 2.4 million in 1982. Some garment companies have 807 agreements with US firms.* However, most

* 807 operations refer to a special provision in the US tariff code on offshore assembly schemes. Under the schemes, inputs are made and cut in the US as finished goods. US duty is charged only on the value added by assembly, not on the inputs originally shipped from the US

manufacturers feel that 807 type operations offer only limited scope due to the extremely narrow operating margins.

Under the recent 936 section initiative US firms based in Puerto Rico have invited joint ventures with Grenadian manufacturers in an effort to persuade the US Government to maintain the status quo with regard to taxation of profits accrued in Puerto Rico. While no decision has been made by Washington firms such as Johnson and Johnson, Smith, Klein and Beckman and Abbot Laboratories have confirmed commitment to establish in Grenada.

Since no factory space has yet been completed by Government, in general investors who have been approved by Cabinet cannot go ahead. In the case of Johnson & Johnson (US) they have been able to rent temporary factory space with Hadeed Industries.

According to a "Survey of the Manufacturing Sector", conducted by the Project Development Assistance Programme (PDAP) in October 1984, the typical Grenadian company is owned by local families or small entrepreneurs with an average of 25 employees. Of the 34 firms surveyed, 15 had less than 10 employees and 3 more than 100. They are engaged in simple assembly or job-shop type operations such as furniture making, building materials, welding and garment making or in the production of food products and beverages.

Most suffer from a shortage of capital, management talent and lack of skilled labour.

2.3. ASSESSMENT OF DEMAND FOR INDUSTRIAL LAND AND PRE-BUILT FACTORY SHELLS

2.3.1. DEMAND FORECAST:

During the last two years, several applications from potential entrepreneurs, local, foreign and joint ventures were received by the GIDC and were subsequently submitted to Cabinet for approval.

The following tables contain a brief summary of these applications.

Table I

Applications for factory shells - 1985

No.	Origin of applicant	No. of projects approved	Factory shells in sq. ft.		% distr. of proj. proc.
			approved	proceeding	
1.	Grenadian	44	93,000	2,500	5
2.	Joint venture	13	40,425	16,200	35
3.	Foreign	12	58,000	28,000	60
Total				46,700	100

Applications for factory shells - 1986 (for first 6 months)

No.	Origin of applicant	No. of projects	Factory shells in sq. ft.		% of seeking for
			Required	Seeking for	
1.	Grenadian	18	78,600	9,500	25
2.	Joint venture	8	18,800	5,000	13
3.	Foreign	8	93,600 (+ 2 acres)	23,000	62
Total				37,500	100

Pesimistically assuming that the 1986 (full year) figures will be equal to 1.5 x the first six months of 1986, the following estimates are obtained:

1. Grenadian applicants	1.5 x 9,500	=	14,250 sq.ft.
2. Joint venture	1.5 x 5,000	=	7,500 sq.ft.
3. Foreign	1.5 x 23,000	=	34,500 sq.ft.
	Total		<u>56,250 sq.ft.</u>

The expected increase of applications amounts to about 20% in comparison with the preceeding year of 1985. This rate of growth is rather optimistic and again pesimistically the authors take as applicable a 10% growth rate. The forecasted figures for a five year period are as follows:

Forecasted demand on factory shells at a 10% rate of growth

1986	-	56,250 sq.ft.
1987	-	61,875 "
1988	-	68,060 "
1989	-	76,866 "
1990	-	<u>82,353 "</u>
Total 1986 - 1990		<u>343,404 sq.ft.</u>

However, the authors wish to state that these estimates should be considered as a scientific guess and other approaches may also be good.

While comparing the percentage participation of these three groups of entrepreneurs, one notices that there is a faster growth rate of the Grenadian entrepreneurs in comparison to the others.

Taking an average of the two years records, the author arrives at the following:

	1985	1986	<u>An average participation</u>
1. Grenadian	5%	25%	15%
2. Joint venture	35%	13%	24%
3. Foreign	60%	62%	61%

The total forecasted figures for these three groups for the five year period could then be assumed:

1. Grenadian	0.15 x 343,400 sq.ft.	=	51,510 sq.ft.
2. Joint venture	0.24 x 343,400 sq.ft.	=	82,416 sq.ft.
3. Foreign	0.61 x 343,400 sq.ft.	=	<u>209,474 sq.ft.</u>
Total			<u>343,400 sq.ft.</u>

2.3.2. SUPPLY FORECAST

The expected supply of factory shells for the next five years is presented in Table II.

Table II

No.	Constructions	Total	Y e a r s				
			1986	1987	1988	1989	1990
		i n s q u a r e f e e t					
1.	Frequent Ind. Estate USAID - GIDC	63,000	63,000				
2.	GDB Ind. Estate	40,000	14,400	25,600			
3.	Estimates on private sector constructions	62,000	12,000	15,000	15,000	10,000	10,000
Total		165,000 sq.ft.					

2.3.3. SHORTAGE OF FACTORY SHELLS

Then the forecasted shortage of factory shells for the five year period 1986 - 1990 will be:

Demand total	343,400 sq.ft.
Supply total	165,000 sq.ft.
Shortage	<u>178,400 sq.ft.</u>

2.3.4. CONCLUSIONS

The above given estimate on the shortage of factory shells in the five year period from 1986 till 1990 proves the need to establish further industrial estates and industrial zones in the country.

Due to the shortage of factory shells, the authors propose the immediate establishment of an industrial estate, which should accommodate about 40% of the forecasted shortage in the first phase of construction.
 $0.4 \times 178,400 \text{ sq.ft.} = 71,360$ say 72,000 sq.ft.

As already mentioned above, the authors take a cautious approach both to the forecasted demand and the proposed size of the additional industrial estate. It may be presumed that the construction of factory shells and their offer for immediate occupancy on a rental basis may accelerate further demand.

A successful occupancy of the proposed industrial estate during the first phase - until 1990, may demonstrate a necessity to enter into the second phase, or, if contrary, withhold future expansion of the programme.

The authors wish at the same time to refer to another report carried out on the same subject by Free Zones Authority Ltd. in April 1986. The said report forecasted a shortage of 138,000 sq.ft. for the five year period 1986-1990.

2.4. CATEGORIES OF INDUSTRY ADMISSIBLE TO THE INDUSTRIAL ESTATE AND SIZE OF FACTORY SHELLS

2.4.1. Any industry, before being granted admission to one of the Industrial Estates should submit to the Grenada Industrial Development Corporation an application, giving particulars of the proposed technological process and providing other required information. Such applications should be the subject of a detailed study in respect of economic viability, market demand, requirement of water, power and sewage as well as particulars of nuisance and pollution it may cause to the natural environment and other industries or housing in the surrounding location.

The main criteria, amongst others, should be:

- low pollutive type of production;
- low energy and water consuming processes (due to limited resources available on the estate)
- low nuisance production;
- using non inflammable materials for manufacturing.

In addition, especially for goods to be exported:

- light weight products due to transport cost burden.

Below, the authors give some examples of various industries which might be further studied for admission to the industrial estates. Some of them have been submitted to the Cabinet for approval.

Manufacturing Industries:

1. Furniture
2. Garments
3. Agro-processing products)under special
4. Meat processing (excluding slaughtery))conditions
5. Cosmetics
6. Essence blending
7. Knitted and woven goods
8. Medical instruments and appliances
9. Sports gear and appliances
10. Musical instruments and appliances
11. Jewellery
12. Plastic bags
13. Cocoa processing
14. Fiberglass spoilers
15. Wooden clocks and penholders
16. Mattresses
17. Household paper products

18. Assembling of video-tape cassettes
19. Contact lens and eye glass frames
20. Wood crafts
21. Fishing appliances
22. Optical cases & accessories
23. Christmas decorations
24. Herbal teas, scented soap (based on local raw materials)
25. Electrical components and office supplies
26. Packing of fresh agricultural produce for export
27. Sattelite receiving discs
28. Production of rubber slippers and shoes
29. Chinese noodles
30. Communications equipment and appliances
31. Toys
32. Leather products (excluding tannery)
33. Bisquit and confectioneries
34. Handicraft products
35. Precision machinery and instruments
36. Metal products
37. Art Metal Work
38. Wood carving
39. Curtains
40. Pottery
41. Silversmithing
42. Embroidery
43. Micro-computers
44. Sound monitoring equipment
45. Zip fastners
46. Plastics moulding
47. Pumps
48. Polyethylene packaging, paper tubes
49. Office stationery, printing
50. Industrial fasteners

2.4.2. SIZE OF FACTORY SHELLS

According to GIDC statistics for 1985 and 1986, the applications for factory shells by sizes are as follows:

<u>Size of factory shell required</u> (in sq. ft.)	<u>No. of applications</u>
300	1
400	1
500	4
600	1
700	2
800	1
900	1
1,000	4
1,200	1
1,500	<u>3</u>
Up to a total of 1,500 sq.ft. total	<u>19</u>

<u>Size of factory shell required</u> (in sq. ft.)	<u>No. of applications</u>
2,000	9
2,500	1
3,000	2
3,500	1
4,000	4
5,000	11
5,500	1
6,000	<u>2</u>
more than 1,500 up to 6,000 sq.ft. total	<u>31</u>
7,000	1
8,000	1
10,000	5
12,000	1
13,200	1
20,000	<u>1</u>
more than 6,000 sq.ft. total	<u>10</u>
Total	<u>60</u>

from 300 sq ft to 1,500 sq ft	19 units 32%
1,500 sq ft to 6,000 sq ft	31 units 51%
above 6,000 sq ft	<u>10 units 17%</u>
Total	<u>60 units 100%</u>

The authors have taken the above statistical figures as a trend in the requirement for various sizes of factory shells in Grenada and extrapolated it for the next four years.

It can be seen from the above specification that about 83% of the prospective investors in Grenada require factory space ranging from 300 sq.ft. up to 6,000 sq.ft. per unit. The remaining 17% needs larger factory shells which can be obtained either by multiplying the unit of 3,000 sq.ft. or constructing a particular shell individually.

In the authors' opinion, for the first Phase (I) of the proposed industrial estate, the following composition would meet the expected demand from prospective investors.

Table III

No	Size of the shell	Area of one shell in sq. feet	No. of units	Total area in sq. feet
1	100 ft x 30 ft	3,000 sq ft	6	18,000
2	100 ft x 60 ft	6,000 sq ft	6	36,000
3	100 ft x 90 ft	9,000 sq ft	2	18,000
Total for Phase I			14	72,000 sq ft.

The factory shell no. 1 can be divided into smaller units to meet the actual demand. The final decision in this respect can be taken after signing preliminary agreements with applicants, then the construction of required partition walls and arrangement of doors, windows, toilets etc. can follow.

2.4.3. SIZE OF PLOTS OF LAND FOR FACTORY SHELLS

Each factory should be constructed on a suitable sized plot of land. The required size depends on the type of production or services. For the preliminary calculations, the plots of land have been assumed at a larger size to allow possibilities for expansion. A final selection would be taken in the Feasibility Study, which should follow this report.

2.5. CONCEPT OF INDUSTRIAL DEVELOPMENT IN GRENADA

In view of the great scarcity of land suitable for industry, it is necessary to have effective management and economic use of the limited plots of land. This can be done by the construction of industrial estates and industrial zones.

Two industrial estates are now under construction at Frequente, St. George's. These estates will definitely contribute to the planned industrial development of Grenada. Both estates, located close to St. George's, the capital, have good access to labour sources and the required physical and social infrastructures.

Industrial Estates are convenient vehicles for regulating the flow of industry to any one area. They can be used to disperse industries towards the under-developed parts of the country. Regional development enhances industrialization of the rural areas, encouraging people to remain in their home area thus helping towards decongestion of urban centres. Indirect benefits also accrue through linkages of established estate industries with the domestic sector. Small scale services industries are encouraged to set up to provide services such as repair shops, light engineering, packaging, warehousing for raw material, hauliers, customs agents, shops etc.

In order to disperse within the country additional industries, it is proposed in this study to establish a third industrial estate at the old Pearls Airport in St. Andrews. This industrial estate, on completion, would be located close to Grenville which has around 25,000 inhabitants. Such an estate would help in solving the severe unemployment problem in the area.

There are no other locations in Grenada with a similar level of inhabitants.

However, in regions like Sauteurs and Gouyave, the encouragement of small-scale handicraft industries is certainly desired. The authors therefore recommend the construction of enterprise centres in these areas. Provision of infrastructure for these areas should be made in a planned and economic way under the supervision of GIDC.

As stated in the terms of reference (See Appendix No. 7) the author is requested to suggest whether the country needs an Airport or Industrial Free Zone. The main task of such a zone would be to attract foreign companies, so that they would bring their know-how, machinery and materials for the manufacturing of goods which will then be exported to foreign markets. The major difference between an Industrial Estate and Industrial Free Zone is that Free Zones normally export 100% production based on duty free import of equipment and raw materials. In CARICOM "enclave" industries are clearly defined as being those which do not sell locally, but export 100% outside CARICOM. This is why the term "Industrial Free Zone" is little used in the region. Most Caribbean countries have legislation to give preferential treatment, with incentives to investors.

There are certain conditions needed to encourage foreign companies to invest. These include:-

- available low cost labour;
- low rentals for factory shells;
- high working efficiency of estate management;
- high level of administration.

It is likely that the Pearls location will be more attractive to local investors, who at present are not well served. Within the Caribbean a co-called "Free Zone" is in fact, the CARICOM investment agreement, by which Grenada is classified as an LDC (Least Developed Country), allowed to offer maximum investment incentives.

Investors who operate under "enclave" conditions should be offered the incentives package agreed by CARICOM which is basically a maximum of 15 years freedom from taxes on corporate profits. Since such manufacturers import most raw materials and export all products, there is no need for an area to be designated as a free zone. Imports and exports to these manufacturers mostly travel in sealed containers, subject to random customs inspections.

2.6. ANALYSIS OF CENTRES VISITED

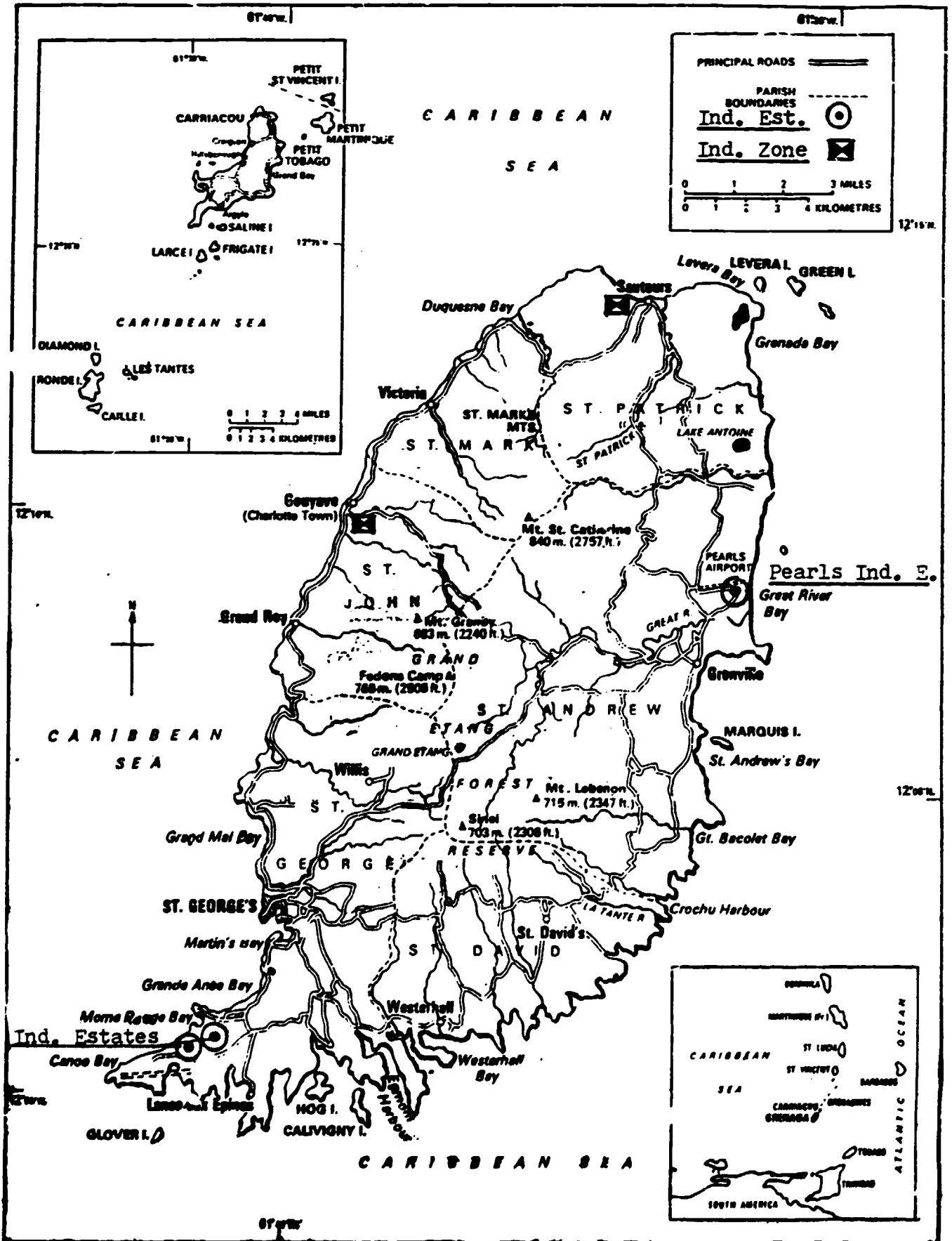
2.6.1 GRENVILLE Capital St. Andrews

Grenville, the second largest town in Grenada is located on the east coast in the main agricultural region of the island. The agriculture policy of the present government is concentrating on improving the quality and increasing the output of agricultural produce such as cocoa and bananas.

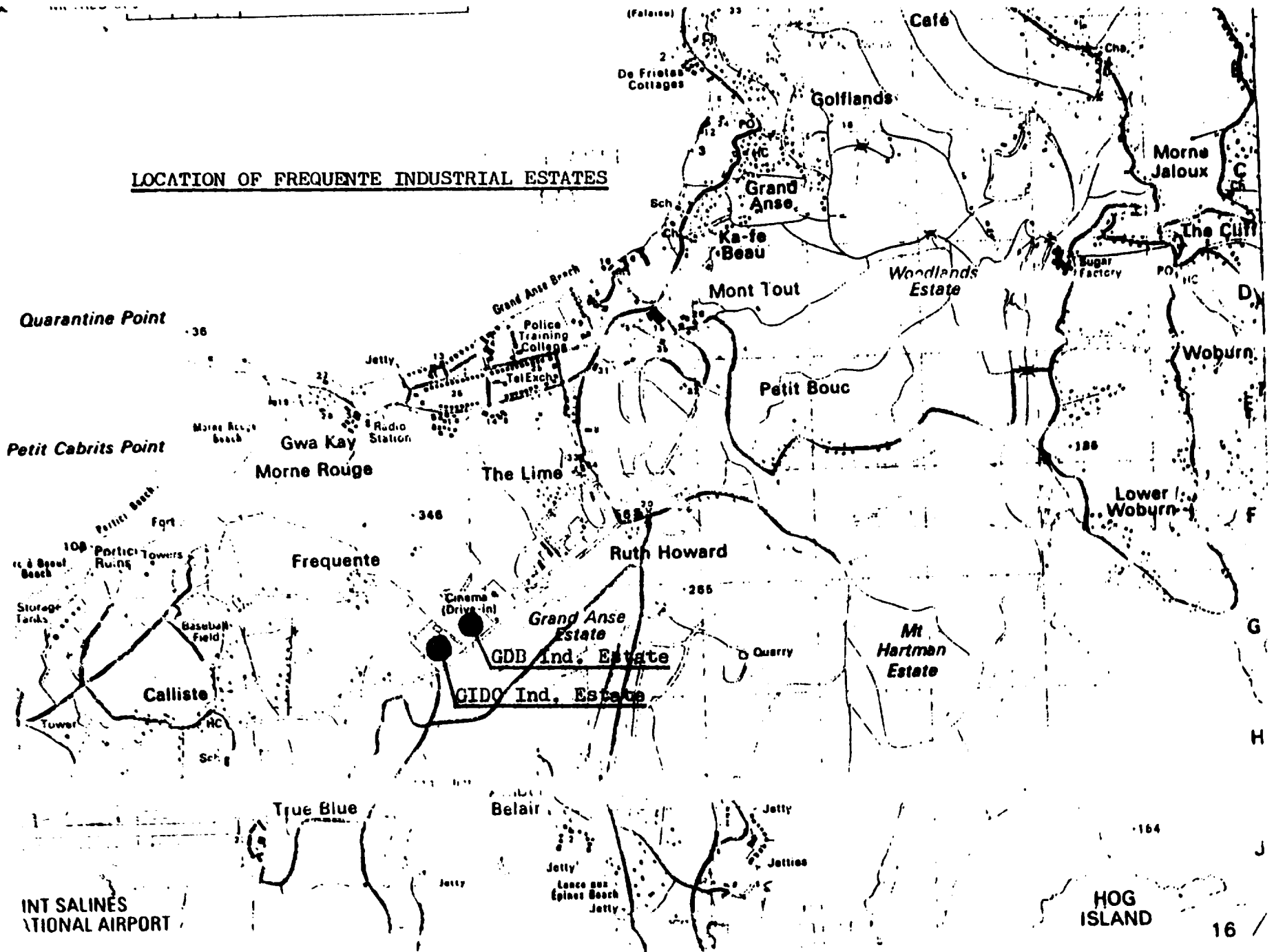
Much of this produce is exported through the port by boat to Caricom locations, mainly Trinidad and Barbados. Due to the inadequacy of the port, products for further afield must be exported through St. George's.

Grenville was until 1984 the location of Grenada's only airport. With the completion of the new airport at Point Salines, Pearls was closed and the terminal buildings and site are at present used by the Ministry of Works to service the road programme.

GRENADA



LOCATION OF FREQUENTE INDUSTRIAL ESTATES



The closure of the airport severely affected the population of Grenville. Services provided to the airport are no longer required such as taxi-drivers, buses, hotels, restaurants and shops as well as the direct employment given by the airport in servicing and maintenance of aircraft and terminal staff. The livelihood of a large number of people has been affected and alternative employment is scarce. (During my visit I noted large numbers travelling to St. George's by bus to work.)

2.6.2 GOUYAVE Capital St. John's

Gouyave is located on the north-west coast of the Island. The town is hilly with narrow streets rising rapidly into the hills behind. It is the centre of the fishing industry and the major nutmeg collecting point on the island. Industries in the region are few and the majority of the population is either engaged in fishing or agriculture or travels to St. George's to find work.

The road from St. George's to Gouyave is in extremely bad condition and very winding. Resurfacing is due to start shortly.

The north-west coast of the island is extremely beautiful with many coves and small sandy beaches.

2.6.3 SAUTEURS Capital St. Patrick's

Sauteurs is situated in the north of Grenada, furthest from the industrial and commercial centre of St. George's. Roads to the area are presently under repair. The main employment of the region is in agriculture and a large proportion of the population (particularly the young) are unemployed. Existing industries in the region include some handicrafts and service operations.

There is presently an initiative in the area to establish a "Young Grenadian United Craft Industries" project to provide skills training, start-up and contribution assistance to the youth of the areas. The authors recommend that this project should be given technical assistance by provision of experts and entrepreneur development training by UNIDO.

III. INDUSTRIAL ESTATE PROPOSAL

3.1. GENERAL

Taking into consideration the shortage of industrial land and factory shells, estimated in the preceding Chapter II, it is proposed to establish an additional industrial estate located at Pearls, St. Andrew's.

It should be a general purpose (composite) Industrial Estate, Government sponsored. The pre-built factory shells should be offered on a rental basis. However, individually built factories can also be accommodated.

The main goals of the proposed Pearls Industrial Estate would be:

1. Provision in Phase I of the project for about 360 new jobs.
2. Revitalisation of the Pearls/Grenville area. After the closure of the old airport, there has been a decrease of tourist activities and an increase in unemployment.

3. Creation of a wider range of manufactured products for the local market and also for the export markets. Some of the products would be import substitutes.
4. Introduction of a well planned industrialized area which would ensure a more efficient use of land and infrastructural facilities.

3.2. LOCATION

The following page shows the proposed location of the Pearls Industrial Estate on a map of St. Andrew's parish.

3.2.1. A plot of land adjacent to Pearls Airport's runway has been proposed by the relevant Department of the Ministry of Agriculture, as the site for the industrial estate. A sketch drawing of the area was handed to the author on 26th August 1986 (Site No. 1).

While visiting the site the authors noticed that two houses were situated on the site which were not shown on the sketch. The matter was brought to the attention of the Land Survey Department of the Ministry of Agriculture. Representatives of the Land Survey Department promised to clarify the matter and have suggested consideration of another location for the Industrial Estate at the opposite side of the runway (Site No. 2). Most of the land on this site is in private ownership.

Since a final decision on the matter could not be resolved by 15th September 1986, the authors have worked out two versions of layout based on the alternative locations:

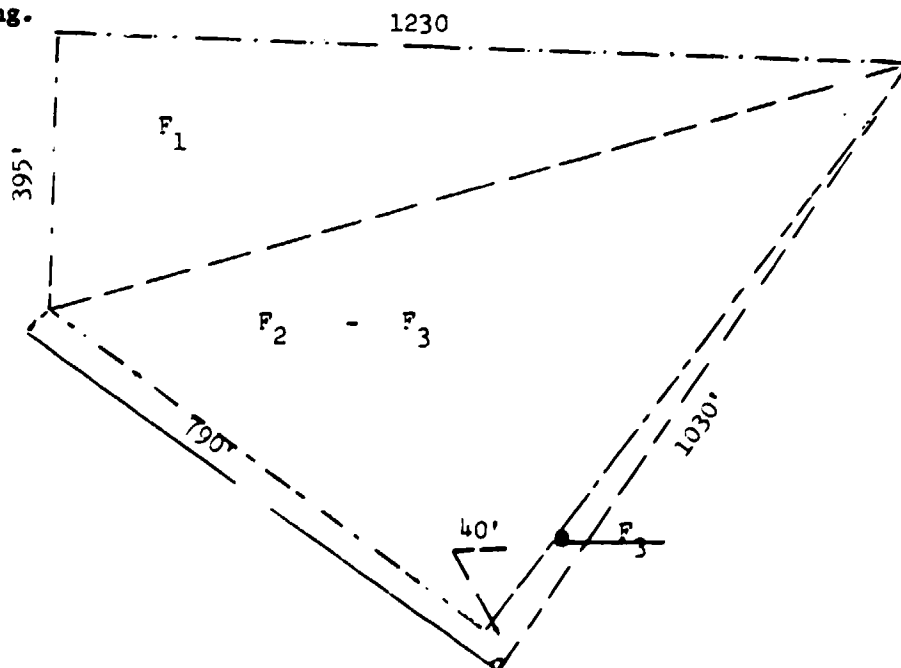
1. A tentative lay-out plan based on site No. 1, assuming relocation of the two houses.
2. A hypothetical lay-out plan based on Site No. 2 (located on opposite side of the runway) for which no drawing was available. The two lay-out plans are given on pages 34,35.

3.2.2. SITE OF THE LAND PLOT FOR THE INDUSTRIAL ESTATE

(Based on site No.1).

The plot of land indicated by the Ministry of Agriculture covers an area of about 14 acres.

The area has been calculated from dimensions taken by scale from the sketch drawing.



Area of site No. 1 is: $F = F1 + F2 - F3$

$$F1 = \frac{395' \times 1,230'}{2} = 242,925 \text{ sq.ft.}$$

$$F2 = \frac{790' \times 1,030'}{2} = 406,850 \text{ sq.ft.}$$

$$F3 = \frac{40' \times 1,030'}{2} = 20,600 \text{ sq.ft.}$$

$$\text{then } F = 242,925 + 406,850 - 20,600 = 629,175 \text{ sq.ft.}$$

$$\frac{629,175 \text{ sq.ft.}}{43,560 \text{ sq.ft./acre}} = 14.4 \text{ acres}$$

3.2.3. LABOUR SOURCE

The proposed sites (No. 1 and No. 2) are located two (2) miles from the town of Grenville which has a population of approximately 25,000 inhabitants. 360 to 400 workers would be readily available in the area.

3.2.4. APPROACH ROAD

An asphalted approach road exists from Grenville to site No. 1. The road is spanned by a narrow width bridge. Both are in need of repair and the bridge is unsuitable for container traffic.

3.2.5. WATER RESOURCES

Pearls airport is supplied with water from the Mt. Horne reservoir. The existing pipeline conveying the water is 1" in diameter. This is not large enough for industrial purposes since the required size is 4 inches. According to the Water Commission, 3,000' of 4" pipeline is needed, at a cost of EC\$ 6.9 per foot to convey water to the Pearls Industrial Estate. Estimated requirement of water for the Industrial Estate is 25,000 to 40,000 imp. gallons/day.

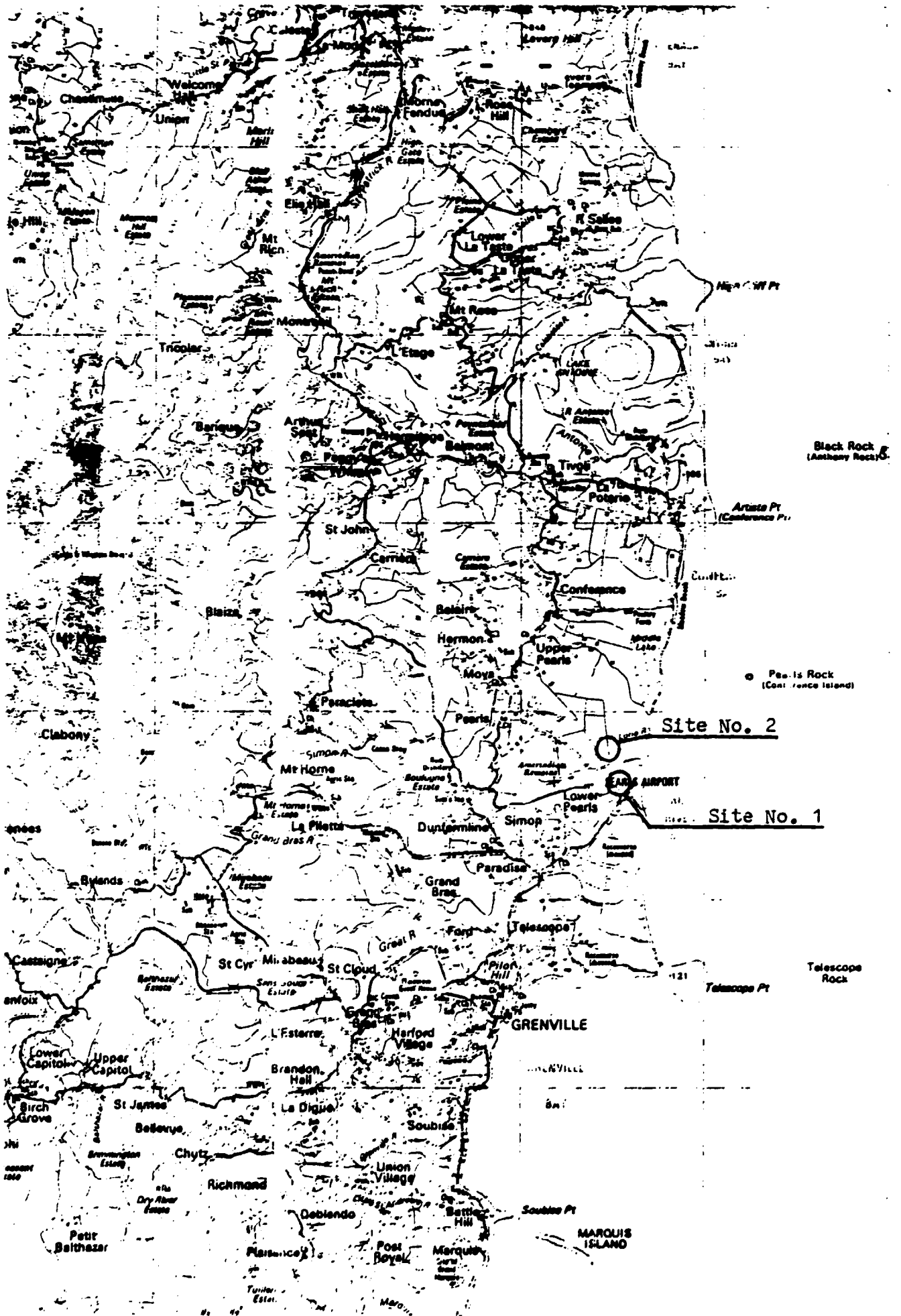
3.2.6. SEWERAGE

At the initial stage sewerage can be disposed of by the use of septic tanks. As the industrial estate expands the use of a Waste-Water Treatment Plant is advised.

In the case of certain effluent, it should be mandated that such enterprises establish their own pre-treatment units and that approval and provision of the unit should be a condition of registration to operate.

3.2.7. ELECTRICITY

According to information obtained from the Grenada Electric Company, the required power supply of approximately 400 KW could be provided on request from the appropriate authorities.



3.2.8. LEVEL OF ENTREPRENEURSHIP

The number of existing industrial establishments in the Grenville area is limited and vocational training in technical skills is required. The authors also recommend that a programme in entrepreneur development be established and that assistance be sought from UNIDO.

3.2.9. LOCAL MATERIAL RESOURCES

The St. Andrew's parish, being mainly agricultural, is a major source of fruit and vegetable products. These products could be processed, dried, packed etc. and distributed by suitable industries.

3.3. SIZE OF THE INDUSTRIAL ESTATE AND PHASED DEVELOPMENT

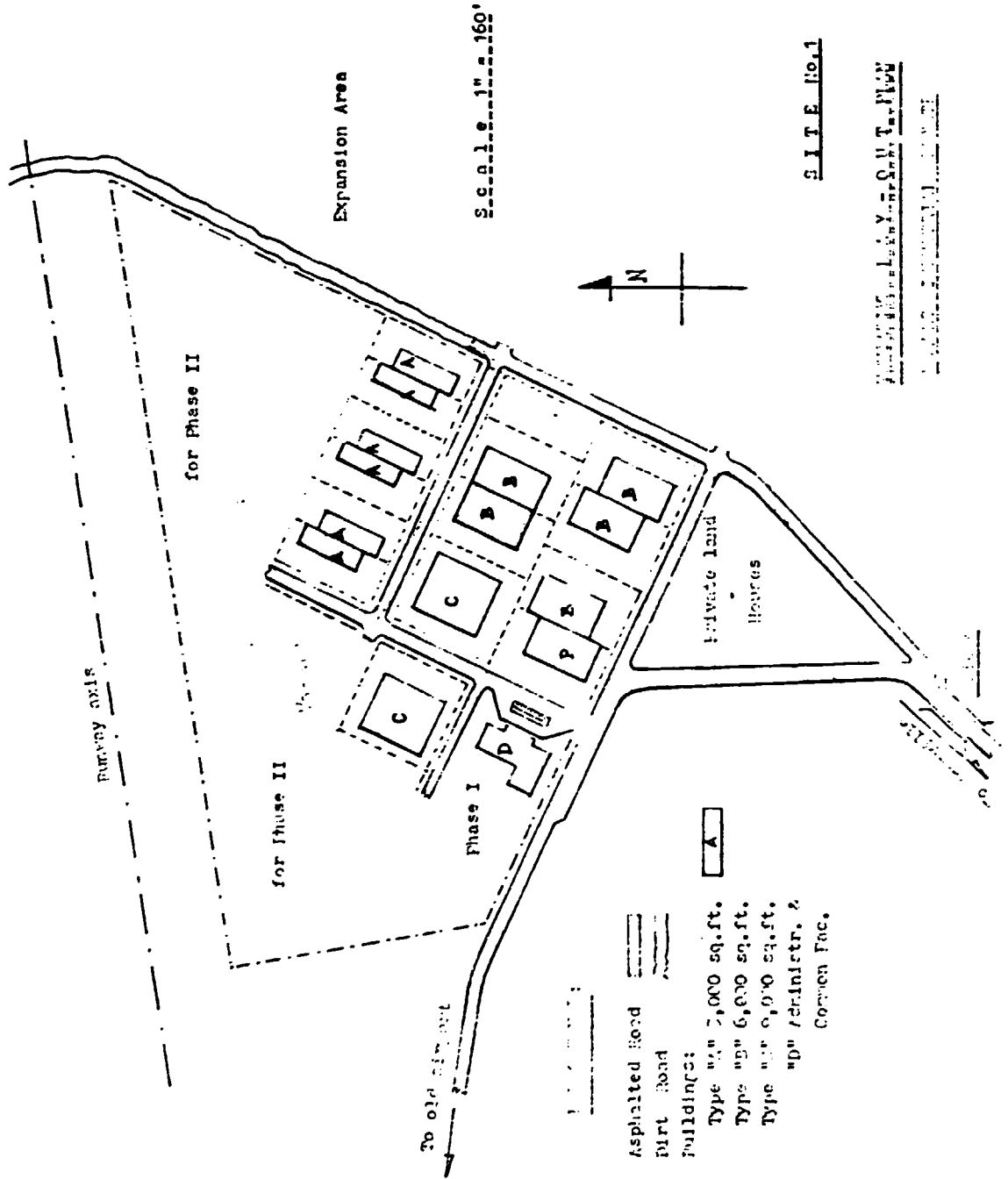
As already given in Chapter II para 2.2. and 2.3. of this report, the authors propose to develop the Pearls Industrial Estate in phases.

Phase I embraces a plot of land that can accommodate the construction of 72,000 sq.ft. of factory shells, administration and common facilities building and utilities.

The estimated size of the land plot, needed for Phase I is approximately 9 acres. A detailed specification is shown in para 3.5.

3.4. LAYOUT PLANS FOR THE INDUSTRIAL ESTATE AT PEARLS

The two alternative layout plans are tentatively sketched on the following pages. As the land survey plans of the area were not available, a final layout plan of the Pearls Industrial Estate has to be prepared in any future Feasibility Study report.




HYPOTHETICAL

LEGEND:

Lay-out Plan

Asphalted Road 

Buildings:

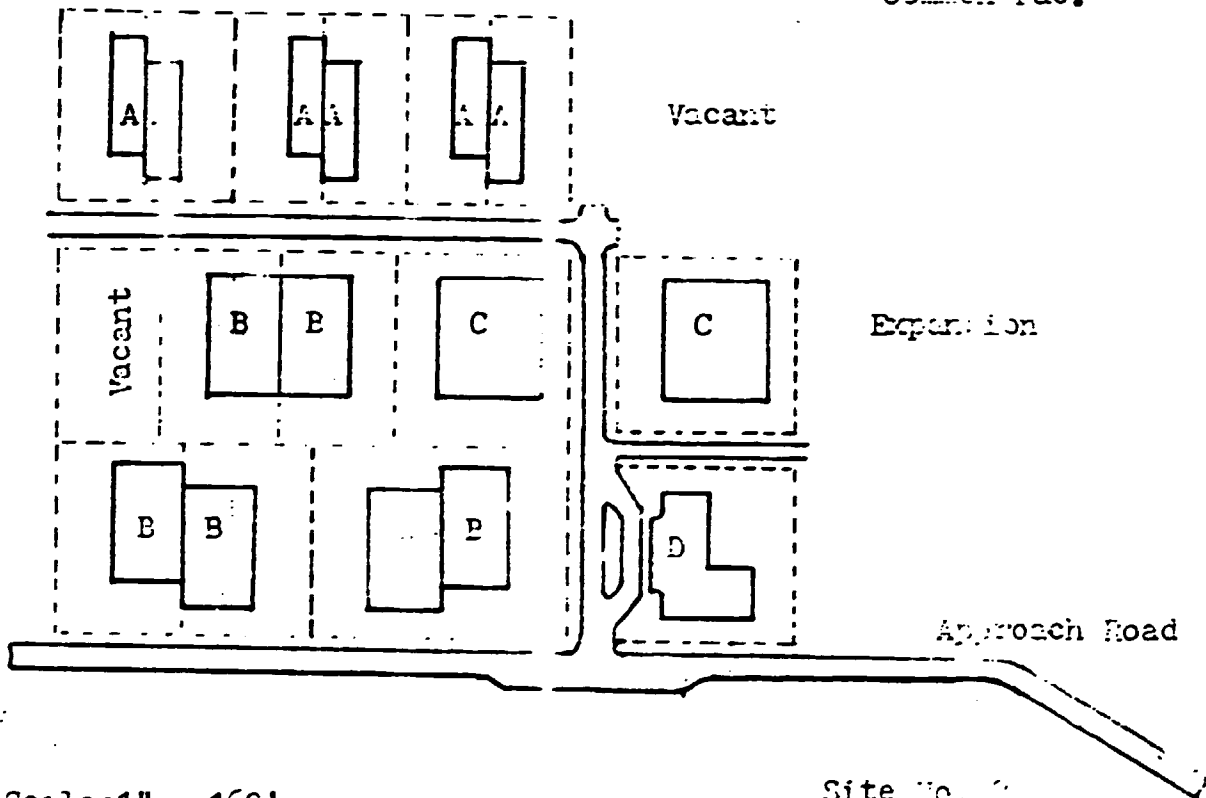
Type "A" 3,000 sq.ft. 

Type "B" 6,000 sq.ft.

Type "C" 9,000 sq.ft.

"D" Administr. &
Common Fac.

Expansion



Scale: 1" = 160'

Site No. 2

TENTATIVE L A Y - O U T P L A N

PEARLS INDUSTRIAL ESTATE

3.5. LAND USE PATTERN

It is proposed to accommodate in the Pearls Industrial Estate (Phase I) the following buildings and utilities:

TABLE IV

No	Description	Q	Area of 1 unit	Total area	Land for 1 unit	Total land	%
				in square feet			
1	Standard factory shell type "A"	6	3,000	18,000	12,000	72,000	
2	as above but "B"	6	6,000	36,000	17,000	102,000	
3	as above but "C"	2	9,000	18,000	24,000	48,000	
4	Vacant for individual construction					63,000	
	Sub-total					285,000	72
5	Administration + common facilities building	1	5,000	5,000	27,000	27,000	
6	Utilities	1	500	500	7,000	7,000	
7	Waste-water treatment plant	1	15,000	15,000	15,000	15,000	
	Sub-total					49,000	13
8	Internal roads and parking				60,000	60,000	15
T O T A L Industrial Estate - Phase I						394,000	100

394,000 sq ft : 43,560 sq ft / acre = about 9 acres

NOTE In the event of a request for the construction of an individual factory shell, the area marked on the layout plan as "vacant" is available for such purposes.

3.6. METHOD OF ALLOCATING ACCOMODATION

It has been presumed that the admission of an industrial unit to the Industrial Estate will be subject to the approval of the GIDC.

3.6.1 A prospective industrialist should submit to GIDC an application made by filling out detailed forms. The GIDC will then analyse the proposal on a technical and financial basis. This would be to ensure that the project is viable. After GIDC clearance, the application would then be submitted to Cabinet for approval. After Cabinet's approval, GIDC would inform the applicant that the unit has been awarded to him, which would include rental levels and tenancy conditions.

3.6.2 All requirements necessary for the establishment of a project in the Industrial Estate should be handled by the GIDC office and/or management office of Pearls Industrial Estate.

3.7. COMMON SERVICE FACILITIES PROPOSED FOR PEARLS INDUSTRIAL ESTATE

One of the benefits of tenancy on an industrial estate is the availability of common service facilities.

3.7.1 Pearls Industrial Estate should offer at the initial stage of operation the following common service facilities:

- postal unit
- secretarial & bookkeeping and telex services (on cost-recovery basis)
- restaurant
- showroom & exhibition hall

3.7.2 The GIDC should endeavour to locate in Pearls Industrial Estate a workshop for the repair of industrial machinery and equipment. This workshop can also serve outside customers who may desire such services.

3.7.3 Certain common service facilities and amenities could be made available at a later stage of the Pearls Industrial Estate operation, for example:

- bus terminal,
- social club,
- library,
- security,
- fire fighting,
- creche

These could be established in conjunction with the appropriate authorities.

3.7.4 It has been presumed that garbage removal from the industrial estate will be carried out by the relevant local Authority. The industrial estate may, however, provide garbage boxes or bins.

3.8. TIME SCHEDULE

FOR CONSTRUCTION AND OPERATION OF THE PEARLS INDUSTRIAL ESTATE

S.	Item description	Y E A R S						
		1	2	3	4	5	6	7
No.	Factory shell construction		50%	50%				
	Ind. Estate occupancy	0	0	40%	75%	90%	95%	95%
I.	<u>I N V E S T M E N T</u>							
1.1.	Preproduction capital expenditures	-----						
1.2.	Fixed Investment	-----						
II.	<u>O P E R A T I O N</u>							
2.1.	Management		20%	50%	100%	100%	100%	100%
2.2.	Maintenance			50%	50%	100%	100%	100%

3.9. STANDARD FACTORY SHELLS

3.9.1. GENERAL

Pre-built factory shells on an industrial estate are a tool used to encourage potential entrepreneurs, having limited financial resources, to start small scale industrial production. Many entrepreneurs are not in a financial position to buy land and build their own factory shell. The industrial estate offers them factory shells on an economic rental basis and in this way improves cash flow at start up.

In addition to small scale establishments, an industrial estate may also accept requests for large size factories to be built by the estate authority, but the construction should only follow on an advance lease agreement being signed by the future occupant.

Advance factory shells are recognized in the world as an excellent promotional tool for industrial development. The benefit of that idea lies in the possibility of offering immediate occupancy for potential investors seeking factory premises for their planned production, avoiding delays relating to settling formalities connected with the construction of a new factory, searching for materials, contractors and supervising the works.

An effective promotional programme if undertaken by the industrial estate's management in conjunction with the construction works would decrease the investment risk to be taken by the promotor in the establishment of the estate.

Finally, the location of a factory in an industrial estate ensures the provision of suitable infrastructural requirements, such as access road, water, electricity, telephone, waste-water disposal etc.

3.9.2. SIZE OF THE STANDARD FACTORY BUILDINGS FOR PEARLS INDUSTRIAL ESTATE

Taking into consideration the points described in para 3.3. a module of 30' x 100' is presented. That size will facilitate the requirements for either larger units or smaller ones.

The multiplication of similar spans offers various sizes:

2 x 3,000 sq.ft. = 6,000 sq.ft.
3 x 3,000 sq.ft. = 9,000 sq.ft.
and so on.

The assumed standard span of the factory shell is 30'. Such a span allows for mass production of several building components and brings down the unit cost of construction. Previous experience proves that the span of 30' is very convenient for small scale and medium size factories.

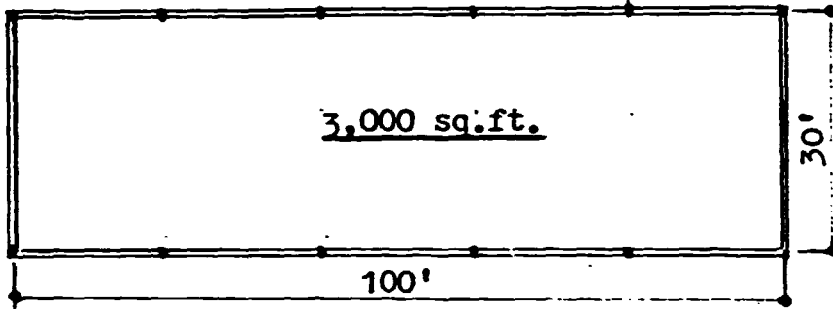
On the other hand, the proposed module permits the division of the standard shell into 2 x 1,500 sq.ft. or even 3 x 1,000 sq.ft. This can be achieved by the use of partition walls.

The following two pages of this report show examples of the division or extension of the standard unit, sketched cross sections and roof view of the standard shell.

3.9.3. DESCRIPTION OF THE STRUCTURE OF STANDARD FACTORY SHELLS

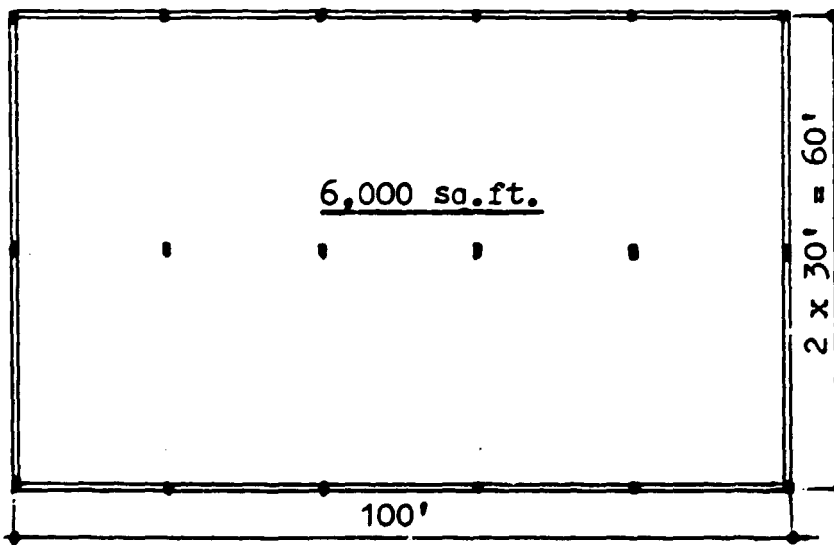
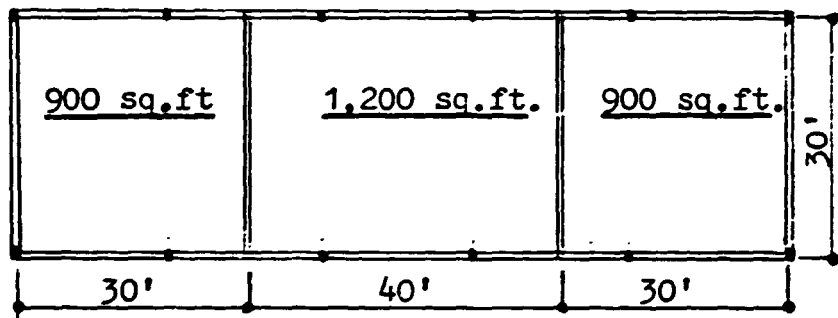
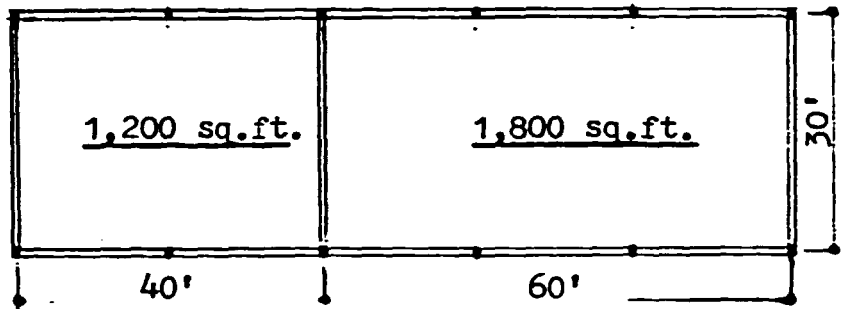
To meet Grenada's climatical conditions and building requirements, the author proposes to apply the following structural solutions:

- Bearing structure of steel portal frames placed at a distance of 20' apart;
- Longitudinal beams of steel purlins 4' apart;
- Roof cladding of industrial aluminium profiled sheets with transparent roof panels, if required;
- Walls made of reinforced concrete blocks;
- Steel and/or wooden doors and gates;
- Aluminium windows with louvred glass protection with decorative bars and wire mesh.



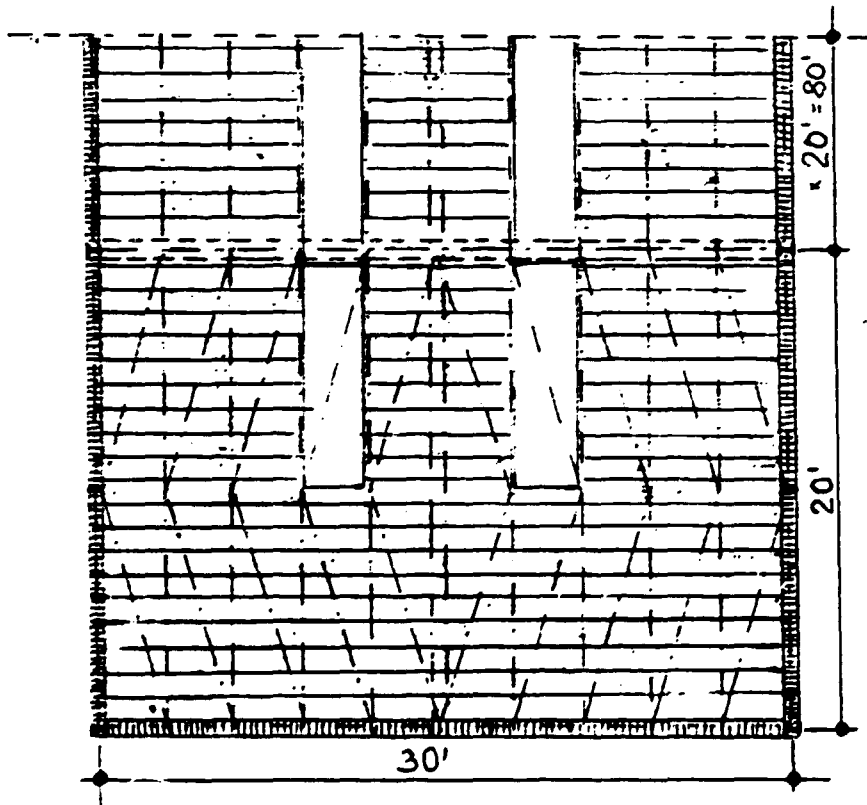
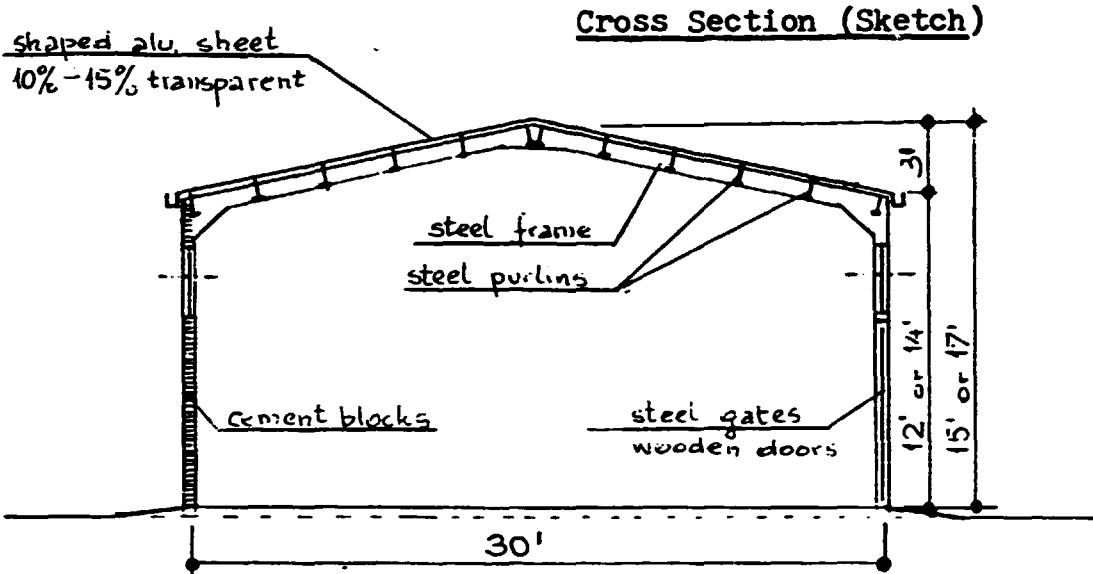
Standard
Factory
Shell

Examples
of
Divisions



Doubled
Standard
Unit

STANDARD FACTORY SHELL



Roof plan (Sketch)

3.10. RENTAL LEVEL

In order to attract foreign and local industrialists into Grenada the rental rates of the industrial estate should be competitive with neighbouring countries in the Caribbean Region. This rental rate should be competitive for similar quality factory shells, infrastructure and common facilities on other islands.

The Government of Grenada is presently charging 4 EC\$ (about 1,48 US\$) per sq.ft. for four existing factory shells at the Frequente Industrial Estate. The project prepared by Free Zone Authority Ltd., USA, suggested a rental of 2.65 US\$ (7.15 EC\$) for newly built factory shells in the same area, for the first three years, increasing by 40% in year 4, 12% in year 5 and 6% thereafter. In the author's opinion the rate of 4 EC\$ (1.48 US\$) per sq.ft. is too low in comparison to the rate that will be charged for the newly built structures. The above rates and those prevailing in other countries are tabulated in table V.

Table V

No.	Industrial Estate location	Rental per sq.ft.	
		US\$	EC\$
1.	<u>Grenada</u> Ind. Est. at Frequente		
	3 years initial	2.65	7.00
	4th year (+40%)	3.70	9.77
	5th year (+12%)	4.15	10.96
	6th year (+6%)	4.40	11.62
2.	<u>Jamaica</u>	3.50	9.24
3.	<u>Barbados</u>	4.25	11.22
4.	<u>Mexico</u> (depending on location)	2.0 to 5.50	5.28 - 14.52
5.	<u>Bahamas</u>	4.25 to 4.50	11.22-11.88
6.	<u>Ireland</u> (Europe) (author's inf.)	6.85	18.50

It seems that the suggested rental rate of 9 EC\$ for factory shells at the proposed Pearls Industrial Estate to be charged on the fourth year from to-day is a competitive one.

On looking at Table V, one notices that the present rental levels of factory space in other countries are way above the price that will be charged at Pearls Industrial Estate in four years time.

It should also be noted that the figures presented in Table V for the other countries will be increasing during these four years.

The authors therefore suggest the following rental rates for Pearls Industrial Estate:

	<u>in EC\$/sq.ft.</u>
1st year of occupancy (third year of construction)	9.-
2nd --	9.-
3rd --	9.-
4th --	9.-
5th -- (about 11% increase)	10.-
6th --	10.-
7th --	10.-
7th,9th and 10th year of occupancy (+20%)	12.-
11th,12th and 13th -- (+17%)	14.-
14th, 15th and 16th -- (+14%)	16.-

For recommendations on rental subsidy within the initial years of occupancy see Chapter I p.1.3.

3.11 ESTIMATED INITIAL INVESTMENT COSTS

Based on Site I.

Table VI

INITIAL INVESTMENT COSTS				
No.	Item description	in thousand E C \$		
		Foreign	Local	Total
1.	Feasibility study	0	0	grant
2.	Preparatory investigation	0	10	10
3.	Detailed engineering, tendering, supervision and take-over 3.5% (of No. 5,6 and 7) (5,977,750)	0	209	209
4.	Land (Owned by Government)	0	0	0
5.	Site preparation and development	0	228	228
6.	Standard factory shells	1,605	3,745	5,350
7.	Administration and common facilities building	120	280	400
8.	Office equipment	24	33	57
9.	Vehicle	23	0	23
10.	Staff training	0	0	grant
11.	Management cost during construction	0	0	GIDC
	Sub total	1,772	4,505	6,277
12.	Contingencies 10%	177	451	628
	T o t a l	1,949	4,956	6,905

Detailed calculation follows.

3.11.1 DETAILED CALCULATION OF INITIAL INVESTMENT COSTS

Re.: No. 1 - Feasibility study

A request will be made to UNDP/UNIDO for financing the feasibility study from Country Programme for technical assistance. The Government will contribute in kind.

Re.: No. 2 - Preparatory investigations

This item should contain: - preparation of a cadastral map of the finally selected site; - marking out industrial estates boarder, road axis, factory shells, buildings and soil investigation.

Assumed 500 hrs x 20 EC \$ = 10,000 EC\$.

Re.: No. 3 - Detailed engineering, planning, tendering, supervision and take over. Assumed 3.5% of the investment costs: 3.5% (228,150 + 5,349,600 + 400,000) EC \$ = 209,221 EC \$.

Re.: No. 4 - Land - The plot of land is State property.

Re.: No. 5 - Site preparation and development

This item includes: levelling, access road, pavements, pipelines, cabling and wiring, lighting poles and water tank. Assumed EC \$ 25,350 per acre - see Appendix No. 3. about 9 acres x 25,350 = 228, 150 EC \$.

Re.: No. 6 - Standard factory shells

This item includes: - delivery of steel structures, cladding, all building components, construction of factory shells, preliminaries, roads, pavements and all installations within the plot of land. 72,000 sq ft x 74.30 EC \$/sq ft = 5,439,600 EC \$ (See Appendix No. 4).

Re.: No. 7 - Administration and common facilities building

5,000 sq ft x 80 EC \$/sq ft = 400,000 EC \$ of this 30% as foreign currency component. (70% - local).

Note: Upgrading approach road, 4 bridges and the making of water pipeline and electrical and telephone supply lines to the boundary of the site are not included in the above costs.

Re.: No. 8 - Office equipment for administration building

	EC \$
1 typewriter	3,000
6 fans (175 EC \$ each)	1,050
2 filing cabinets (1,460)	2,920
2 tables (1,300)	2,600
3 desks (1,100)	3,300
20 chairs (350)	7,000
4 shelves (300)	1,200
3 armchairs (1243)	3,729
1 coffee table	800
1 photocopying set	20,200
first set of stationery	5,000
curtains, decorations, lamps etc.	6,000
Total	56,799 rounded to 57,000 EC\$

Re.: No. 9 - Vehicle

A station waggon	22,000 EC \$ (on tax free basis)
Additional equipment	1,000
Total	23,000 EC \$.

Re.: No. 10 - Staff training

Training in the form of fellowships to be arranged by UNDP/UNIDO as a grant.

Re.: No. 11 - Management cost during construction of the industrial estate will be borne by GIDC.

3.12 ESTIMATED OPERATING COSTS

The estimated operating costs of Pearls Industrial Estate are tabulated in Table VII below.

Table VII

PEARLS INDUSTRIAL ESTATE OPERATING COSTS

No	Item description	Unit Cost	Cost in '000 EC \$		
			Foreign	Local	Total
1	Direct salaries			41.4	41.4
2	Overhead costs			65.5	65.5
3	Maintenance of the industrial estate (on contractual basis)			48	48
4	Sub total			154.9	154.9
5	Contingencies 10%			15.5	15.5
6	T o t a l			170.4	170.4
7	Depreciation			168	168
8	G r a n d t o t a l			338.4	338.4

These costs have been calculated of an average year of full operation of the industrial estate.

3.12.1 Details of these calculations are as follows:

<u>Re.: No. 1.</u>	Per one month(EC\$)
Salaries: Manager 1,700 + 300 (travel) =	2,000
Assistant manager	1,400
Accountant	1,500
Typists (2 persons) 2 x 600 =	1,200
Office attend. 2 persons x 400 =	800
Total	6,900 EC \$

In order to decrease the operating costs, the above listed management team will serve the two industrial estates. Pearls Industrial Estate will therefore be charged half the sum of the management costs.

1/2 x 6,900 = 3,450 EC \$ per month
then 12 x 3,450 = 41,400 EC \$ per year.

Re.: No. 2.

Overhead costs:	<u>Per year (EC \$)</u>
- 17% added to salaries	7,038
- water approx.	1,200
- electricity:	
. for administration and common fac. build.	5,400
. for street lighting	19,500
. for water pumps	4,900
- sewerage removal	2,500
- office supplies	9,000
- communications	12,000
- car maintenance and operation	4,000
Total for Pearls Industrial Estate	65,538

Re.: No. 3.

Maintenance of the industrial estate. This will be arranged on a contractual basis with an outside company.

Estimated cost 4,000 EC \$ per month
48,000 EC \$ per year.

Re.: No. 7.

Depreciation:

1. Building and utilities 2% per year	
Investment cost (5,350 + 209 + 228 + 400 = 6,187 thousand EC \$) of these 10% assumed for roads 10% = 619 th. EC \$ then for buildings and installations 6,187 - 619 = 5,568 thousand EC \$	
Depreciation of buildings 2% of 5,568 th. =	<u>111.36 th. EC \$</u>
	per year
2. Roads depreciation	
5% of 619 th EC \$ =	<u>30.95 th. EC \$</u>
3. Office equipment	
depreciation rate 10%	
10% of 57 th. EC \$ =	<u>5.70 th. EC \$</u>
4. Vehicle	
depreciation rate 20%	
20% of 23 th. EC \$ =	<u>4.60 th. EC \$</u>
Depreciation sub-total	152.61 th. EC \$
Contingencies 10%	15.26 th. EC \$
	=====
T O T A L	167.87 th. EC \$
say	168.00 th. EC \$
	=====

Note: the depreciation rates have been taken as advised by GDB.

CASH FLOW TABLE FOR PROJECTED PERIODS AND ESTIMATION

PEARLS INDUSTRIAL ESTATE

(IN THOUSAND EC DOLLARS)

No	ITEM DESCRIPTION		Y E A R S																			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Construction (Cumulative)		52%	65%	100%																	
	Occupancy (Cumulative)				40%	75%	90%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	
1	INVESTMENT	7003	1035	3455	2415	0	0	0	0	27	0	0	0	6	30	0	0	0	0	35	0	0
	a) Initial Investment	6905	1035	3455	2415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	b) Replacement (Vehicle and Office Equipment)	98	0	0	0	0	0	0	0	27	0	0	0	6	30	0	0	0	0	35	0	0
2	OPERATING COSTS	6515	0	30	172	360	338	338	338	338	338	338	372	372	372	372	372	413	413	413	413	413
	a) Operating Cost	3550	0	30	85	170	170	170	170	170	170	170	204	204	204	204	204	245	245	245	245	245
	b) Depreciation	2940	0	0	84	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168
	c) Interest on working capital	25	0	0	3	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	INCOME (Rentals)	15077	0	0	259	486	583	616	684	684	684	821	821	821	958	958	958	1094	1094	1094	1231	1231
4	Surplus before depreciation	11502	0	(-30)	171	294	413	446	514	514	514	651	617	617	754	754	754	849	849	849	986	986
5	Cumulative Surplus before depreciation	11502	0	0	141	435	848	1294	1808	2322	2836	3487	4104	4721	5475	6279	6983	7832	8681	9530	10516	11502
6	Surplus after depreciation	8562	0	(-30)	87	126	245	278	346	346	346	483	449	449	586	586	586	681	681	681	818	818
7	Surplus Cumulative after depreciation	8562	0	0	57	183	428	706	1052	1398	1744	2227	2676	3125	3711	4297	4883	5564	6245	6926	7744	8562

TABLE VIII

3.14 PROJECT EVALUATION

To evaluate the Pearls Industrial Estate project, an investment profitability analysis has been made, using simple methods and discounted cash-flow methods.

INVESTMENT PROFITABILITY ANALYSIS

Simple Methods		Discounted Cash-flow methods	
Simple rate of return (3.14.1.)	Pay-back period (3.14.2.)	Net present value (3.14.3.)	Internal rate of return (3.14.4.)

3.14.1 SIMPLE RATE OF RETURN - "R"

A simple rate of return is the ratio of the net profit in a normal year to the initial investment.

Assumptions:- "Normal" years are those from year 6 to year 20 (See Table VIII). As the figures differ for the particular years, the authors take an average net profit for those 15 normal years:

$$F = \frac{\sum_{t=6}^{20} Ft}{15} = \frac{8,134,000 \text{ EC } \$}{15 \text{ years}} = 542,000 \text{ EC } \$/\text{year}$$

- "Invested capital" = assumed as own capital.

$$\text{Simple rate of return } R = \frac{F}{I} \quad \text{where:}$$

F = net profit in a "normal" year;
I = total initial investment

$$\text{then: } R = \frac{542,000 \text{ EC } \$ \times 100}{6,905,000 \text{ EC } \$} = 7.9\%$$

The simple rate of return indicates that the net profit is not very high (due to a rather low rental level adopted intentionally - see p. 3.10). Therefore only a low bank interest loan or preferably a grant would be a suitable way of acquiring capital for the project.

3.14.2. PAY-BACK PERIOD - "P"

This method measures the time needed for the project to recover its total investment through its net cash earnings.

$$I = \sum_{t=1}^P (F_t + D_t)$$

where: I = total investment
F_t = annual net profit in the year "t"
D_t = annual depreciation in the year "t"

(Figures taken from Table VIII 3.13.)

<u>Years</u>	<u>Capital at end of year in '000 EC \$</u>
1	- 1,035
2	- 4,520
3	- 6,764
4	- 6,470
5	- 6,057
6	- 5,611
7	- 5,124
8	- 4,610
9	- 4,096
10	- 3,445
11	- 2,828
12	- 2,217
13	- 1,493
14	- 739
15	+ 15

Repayment would take place in 15 years.

3.14.3. Net present value - NPV

The net present value of the project is defined as the difference between the present values of its future cash inflows and outflows (for the whole life of the project - 50 years for Pearls Industrial Estate). This means that all annual cash flows should be discounted to the zero point of time (the project implementation starts in year 1).

The above is aggregated in the formula:

$$NPV = \sum_{t=1}^{50} (CI - CO) \cdot a_t \quad \text{where:}$$

NPV = net present value

$\sum_{t=1}^{50}$ = a sum total for the whole life of project from year 1 to 50.

CI_t = cash inflow in the year "t"

CO_t = cash outflow in the year "t"

a_t = discount factor in the year "t" corresponding to selected rate of discount.

Taking into account a long term, low interest loan, a rate of 5% has been adopted for discounting.

then the authors arrived at

$$NPV = \frac{5,322,000 \text{ EC } \$}{6,085,000 \text{ EC } \$} = 0.88$$

Therefore unit of discounted total investment generated 0.88 units of net present value.

3.14.4. Internal rate of return - i_r

Internal rate of return " i_r " is the rate of discount that reduces the net present value of a project to zero.

$$0 = \sum_1^{50} (CI - CO) \frac{1}{(1+i_r)^t} \quad \text{where:}$$

- CI_t = cash inflows over the entire life of the project (50 years)
- CO_t = cash outflows over the entire life of the project "
- a = discount rate factor
- i_r = internal rate of return.

The project will be accepted, if

$$i_r \geq i_{min}$$

then: at $i_1 = 8\%$ = 852,000 EC \$
 at $i_2 = 9\%$ = -55,000 EC \$

$$i_r = i_1 + \frac{852,000 \text{ EC } \$ \times 100}{852,000 + 55,000} = 8.94\% = i_r$$

3.15. CONCLUSION OF THE FINANCIAL EVALUATION

Due to the unavailability of land survey and final selection of the proposed location for Pearls Industrial Estate most of the essential cost data for this pre-feasibility study are assumed (in 3.14.). Therefore, in the authors' opinion the simple methods of investment profitability analysis presented in the report are sufficient in order for the relevant authorities to decide whether or not to proceed to feasibility stage.

The experts have applied a 50 year life span (2% depreciation as recommended by the Grenadian Development Bank) to the project as the main components for industrial estates are factory shells (not plant or machinery) with an average life-span of 40 - 50 years. This is in accordance with the UNIDO guide to Industrial Projects.*

As a result of our discussions with the GIDC it was apparent that the main objectives of the project are of a social nature i.e., the revitalization of the Grenville area and the provision of new employment opportunities. The financial profitability will not be decisive.

However, UNIDO has applied the industrial programme of COMPAR for feasibility studies to the findings of the experts. (see Annex II) and has arrived at an internal rate of return of 6.12 % using a 15-year life-span for the project.

It must be clearly understood that both the above mentioned options are to be considered as indicative only as the pre-feasibility study data and location of the estate have yet to be confirmed.

* Manual for Evaluation of Industrial Projects 1984 N.Y. UN Publication No. ID 244 pages 39-48.

CLIMATIC CONDITIONS IN GRENADA

1. Temperature (in C°)

Average of two years records (1983, 1984)

M O N T H	MAXIMUM		MINIMUM	
	Mean	Highest	Mean	Highest
January	28.4	29.3	23.9	20.1
February	29.1	29.8	24.0	20.2
March	29.2	30.5	24.5	21.7
April	29.8	30.5	24.9	22.2
May	29.6	30.8	25.0	22.4
June	29.9	30.6	25.4	23.0
July	29.7	30.5	25.1	22.6
August	30.1	30.9	25.0	22.9
September	30.5	31.2	24.9	22.2
October		n o t	a v a i l a b l e	
November		n o t	a v a i l a b l e	
December	27.8	29.7	24.3	22.2

Source: Pearls Airport

Digest of Monthly and Quarterly Statistics, 1984

2. Rainfall (in mm) - Average of two years records (1983, 1984)

M O N T H	Total Rainfall in mm.	Maximum Rainfall in a day	No. of days with rain- fall more than 1 mm
January	53	19	16
February	77	26	8
March	27	7	6
April	32	12	6
May	131	30	17
June	113	30	13
July	154	29	18
August	198	52	16
September	192	50	17
October	n o t a v a i l a b l e		
November	n o t a v a i l a b l e		
December	103	24	17
Total average	1,080		134

3. Humidity - Average of two years records (1983, 1984)

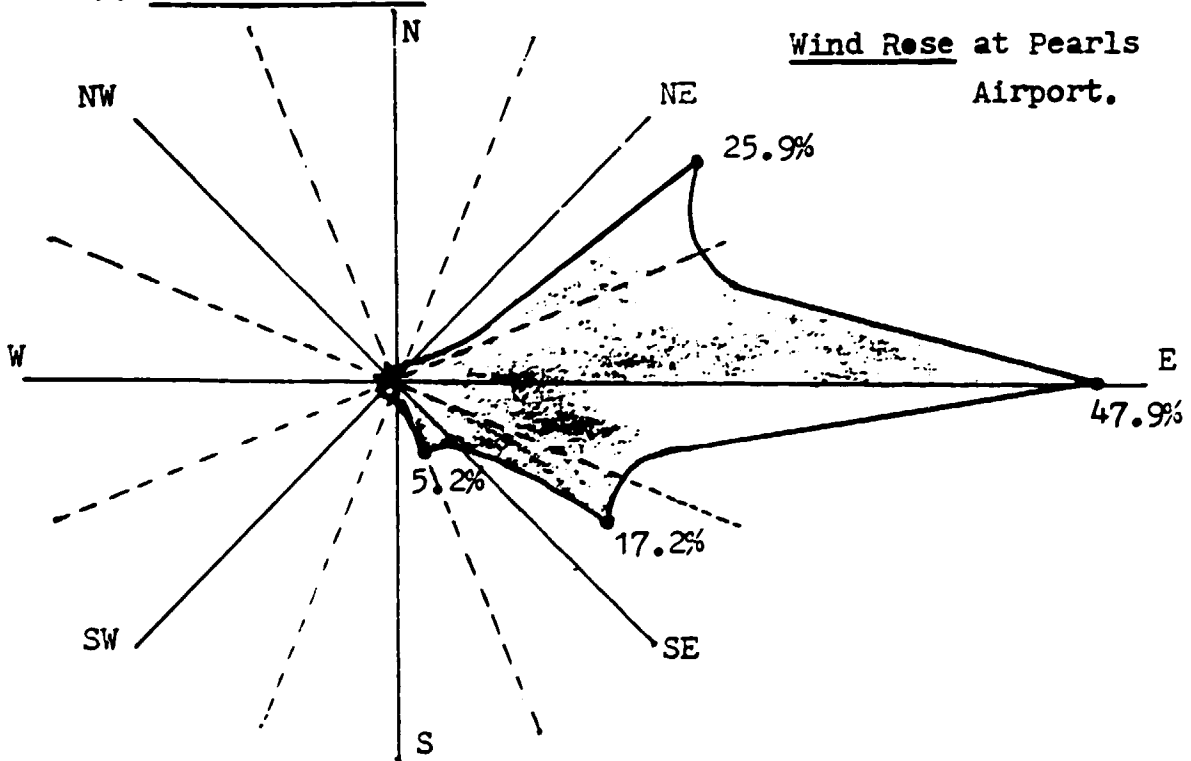
MONTH	08 ⁰⁰ hrs	14 ⁰⁰ hrs
	local time	
January	77%	72%
February	72%	72%
March	71%	71%
April	73%	70%
May	82%	77%
June	82%	78%
July	81%	78%
August	79%	79%
September	79%	77%
October	not available	
November	not available	
December	not available	

Source: Pearls Airport
Digest of Monthly and
Quarterly Statistics, 1984

4. Hours of sunshine. (year 1981)

MONTH	Hours of sunshine	%
January	237	64
February	204	61
March	241	65
April	224	62
May	215	58
June	170	47
July	222	60
August	235	63
September	226	62
October	243	65
November	211	59
December	170	46
Total per year 1981	2,598	59

5. Wind directions



SALARIES AND WAGES
=====

1. SALARIES (As applicable for the staff of the industrial estate)

in EC \$ per month

1.1. Manager	1,700 + travel allowance 300.-
1.2. Assistant Manager	1,400
1.3. Accountant	1,500
1.4. Typist	600
1.5. Office Attendant	400

plus overhead costs say 17% (for leave with pay, insurances, training etc) in accordance with National Insurance Scheme.

Source: Grenada Development Bank, August, 1986

2. WAGES

in EC \$ per hour

2.1. Foreman	8.-
2.2. Skilled Worker	7.-
2.3. Un-skilled Worker	3.60
2.4. Truck Driver	5.-
2.5. Watchman	3.60

plus overhead costs say 24% (for holiday with pay, insurances, travelling expences, small tools, Head Office charges etc).

In accordance with National Insurance Scheme.

Source: Malins - Smith & Gordon, Contractors

January, 1986 - Offer estimates for GDC estate at Frequente

SITE DEVELOPMENT COST AT PEARLS

Preliminary estimate for site development cost for proposed Industrial Estate at Pearls in St. Andrew's parish.

Total area: 18 acres - 0.5 acre = 17.5 acres

	<u>in EC \$</u>
- Site clearance	8,500
- Road works and pavings	225,000
- Sewerage	30,500
- Drainage	24,600
- Electrical and telephone installation	75,000
- Water installation	<u>80,000</u>
Total	443,600 EC \$

then $\frac{443,600 \text{ EC } \$}{17.5 \text{ acres}} = 25,349 \text{ EC } \$ \text{ per acre}$

say 25,350 EC \$ per acre

Source: Mr. Fanuel Antoine, Ass. Quantity Surveyor, Ministry of Communication & Works.

Date 18 July, 1986.

CONSTRUCTION COSTS OF FACTORY SHELLS

1. Steel structure

C.I.F. (Cost, insurance, freight) price for steel structure of a factory shell (imported) is EC \$ 18.62 per sq.ft. of shell. This is equivalent to US \$ 6.90 (Foreign currency component).

Source: Grenada Development Bank, 1986.

Remark: ^{figure/} this is from a contract price concluded with an agent (middle-man). In case of a direct purchase from manufacturer, about 10% reduction may be obtained. Say EC \$ 18.62 less 1.86 = EC \$ 16.76 or 6.2 US \$.

2. Construction Cost

Construction cost of a factory shell on a "turn-key" basis, including preliminaries, water, electricity, telephone installation and sewerage disposal, amounts to:

2.1. EC \$ 54.63 per sq.ft.

Source: Estimate made for this study by Mr. Fanuel Antoine, Ass. Quantity Surveyor, Ministry of Communication & Works. 22, July, 1986.

or

2.2. EC \$ 60.40 per sq. ft.

Source: Contractor's Bill - Malins - Smith & Gordon - for 4,500 sq. yards = 40,500 sq.ft. of factory shell. 16 Dec. 1985.

as follows:

	<u>EC \$</u>
- General and preliminaries	96,315
- Site preparation and earthworks	178,203
- Concrete, blockwork and reinforcement	986,211
- Structural steelwork and cladding	96,081
- Roads and pavings	239,730

continue

..... continue

	<u>EC \$</u>
- Services (water)	72,053
- Lighting & Power Supply	274,743
- Miscellaneous	<u>183,731</u>
Sub-total	2,127,067
- Contingencies 15%	<u>319,060</u>
Total	2,446,127

then $\frac{\text{EC } \$ 2,446,127}{40,500 \text{ sq.ft.}} = 60.40 \text{ EC } \$/\text{sq.ft.}$

3. Total cost including steel structure purchase

Taking an average of those two prices given above

$$\frac{\text{EC } \$/\text{sq.ft.} (54.63 + 60.40)}{2} = 57.51 \text{ EC } \$/\text{sq.ft.}$$

Then, the total cost (delivery and construction amounts to:

$$\text{EC } \$ (16.76 + 57.51) = 74.27$$

rounded to EC \$ 74.3 /sq.ft. of factory shell

POWER , WATER RATES AND DEPRECIATION

1. Power rate

EC \$ 20.- per 1 HP installed
plus
EC \$ 0.44 per 1 kWh

2. Water rate

EC \$ 0.01 per one gallon (British)
plus
10% of rental value

3. Depreciation

- 3.1. Buildings and installations (water, electricity, sewage and telephone) = 2% per year (50 years life time)
- 3.2. Vehicles = 20% per year (5 years life time)
- 3.3. Office equipment = 10% per year (10 years life time)
- 3.4. Roads = 5% (20 years life time)

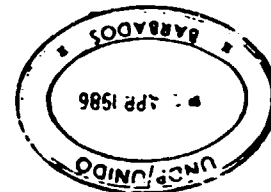
Source: Grenada Development Bank, August, 1986.

Ref No. MF 64/47
In replying the above
Number and date of the
letter should be stated



MINISTRY OF FINANCE
ST. GEORGES,
GRENADA, W.I.

3rd April, 1986



Mr. Peter Ryan,
Senior Industrial Development
Field Adviser,
UNIDO,
P.O. Box 6250,
Bridgetown,
BARBADOS.

Dear Mr. Ryan,

The Government of Grenada has reviewed the applications of the financial and engineering experts on the project - "Planning of Industrial Estates", and is pleased to inform you that the two most suitable candidates are Ms. Angela Jupe, Engineer, and David A. Aitken, Financial Analyst.

In reviewing the overall objectives of the project, the Government wishes to suggest some additional areas which should be focused upon, in light of previous work done on Demand Projections to 1990 by the Free Zone Authority Ltd. of the USA.

It is felt that the UNIDO experts, when considering the future of the development of industrial estates in Grenada, should focus on the following:

- Review the problems of the present programme and suggest solutions;
- Analyse the plans of the private and public sectors re the development of Industrial Estates and factory shells;
- Explore the need for an export processing zone;
- Explore the suitability of the Pearls Airport and other rural areas as possible sites for the construction of industrial estates,
- Suggest the various kinds of incentives necessary to encourage prospective investors to locate in the rural areas;
- Formulate a rental policy for the leasing of factory shells (local/foreign investors).

We feel that the information gathered and documented by the experts will prove extremely useful for the industrial development programme of the Government of Grenada.

Looking forward to your early reply.

Yours sincerely,

DIRECTOR GENERAL

c.c. Mr. Wolf Stefanson, UNDP

TERMS OF REFERENCE (Extract from the Project Document
Revision I).

11-01 Civil Engineer

1.5 months

- a) Examine locally available data in Grenada.
- b) Discuss it with the appropriate officials and the relevant Ministries.
- c) Visit sites.
- d) Establish local costs and labour, raw material, etc.
- e) Write the draft report to discuss with the financial analyst.
- f) Review the problems of the present programme and suggest solutions.
- g) Analyse the plans of the private and public sectors re the development of industrial estates and factory shells.
- h) Explore the need for an export processing zone.
- i) Explore the suitability of other rural areas as possible sites for the construction of industrial estates.
- j) Finalise study using the UNIDO COMFAR system in Vienna, by meeting the financial analyst there at a time to be agreed.

11-02 Financial Analyst

2 months

(Arrive Grenada 2-4 weeks after Engineer).

- a) Review data gathered by 11-01 - Engineer.
- b) Review demand data.
- c) Produce pre-feasibility study and complete draft study made by Engineer.
- d) Suggest the various kinds of incentives necessary to encourage prospective investors to locate in the rural areas.
- e) Formulate a rental policy for the leasing of factory shells to local and foreign investors.
- f) Take the data to Vienna after discussing with the Government of Grenada to complete on UNIDO's COMFAR facility.
- g) Complete study with Engineer in Vienna.