

Solar Photovoltaic Assessment of Polyclinics



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Table of Contents

1. Background	2
2. Introduction	2
3. Eunice Gibson Polyclinic Site Assessment.....	4
3.1 Summary of Findings.....	5
4. Randal Philips Polyclinic Site Assessment	8
4.1 Summary of Findings.....	9
5. Maurice Byer Polyclinic Site Assessment.....	12
5.1 Summary of Findings.....	13
6. Glebe Polyclinic Site Assessment	17
6.1 Summary of Findings.....	18
7. Edgar Cochrane Polyclinic Site Assessment	21
7.1 Summary of Findings.....	22
8. Brandford Taitt Polyclinic Site Assessment.....	25
8.1 Summary of Findings.....	26
9. St. John Polyclinic Site Assessment	30
9.1 Summary of Findings.....	32
10. St. Philp Polyclinic Site Assessment	34
10.1 Summary of Findings.....	36
11. Winston Scott Polyclinic Site Assessment.....	38
11.1 Summary of Findings.....	40
12. Summary	43
13. Conclusion.....	46
Appendix I – Brandford Taitt Polyclinic Electrical Panel Photographs.....	47
Appendix II – Edgar Cochrane Polyclinic Electrical Panel Photographs	50
Appendix III – Glebe Polyclinic Electrical Panel Photographs	51
Appendix IV- Maurice Byer Polyclinic Electrical Panel Photographs	52
Appendix V - Randal Phillips Polyclinic Electrical Panel Photograph	55
Appendix VI – St. John Polyclinic Electrical Panel Photographs.....	57
Appendix VII - St. Philip Polyclinic Electrical Panel Photograph	67
Appendix VIII – Eunice Gibson Polyclinic Electrical Panel Photographs	70
Appendix IX - Winston Scott Polyclinic Electrical Panel Photographs	73

1. Background

The Government of Barbados is seeking to reduce its dependence on fossil fuel as well as reducing greenhouse gas (GHG) emissions within the electricity sector. The Government has made a commitment to have 65% of total peak electricity demand by 2030 being generated from the use of renewable energy technologies. To this end, the government has received funding from the Global Environmental Facility (GEF) and project support from the United Nations Development Programme (UNDP) towards the creation of the Disaster Risk and Energy Access Management (DREAM) Project.

The objective of the DREAM Project is to reduce energy consumption and GHG emissions from fossil fuel power generation, in addition to enhancing the country's Disaster Risk Response (DDR). The project seeks to meet this objective by promoting decentralized solar PV electricity generation in Barbados at thirty-five (35) community and resource centres and nine (9) polyclinics throughout the island.

This consultancy covers the assessment of nine (9) polyclinics, where 5,000 watt PV systems are to be installed, and the monitoring and reporting on the installation at these sites. It also includes monitoring and reporting during the installation phase of the PV systems at thirty-five (35) community and resource centres.

2. Introduction

This report presents the findings from the site assessments that were conducted at nine (9) polyclinics in an effort to identify the various features of the polyclinics such as the type of roof structure, condition of roof, annual electricity consumption etc. These site assessments were deemed necessary so as to allow for a comprehensive tender document to be prepared following the assessments.

The nine (9) polyclinics that were assessed are:

- Eunice Gibson
- Randal Phillips
- Maurice Byer
- Glebe
- Edgar Cochrane

- Brandford Taitt
- St. John
- St. Philip
- Winston Scott

The site assessments entailed collecting the most recent electricity bill, the electrical plans or floor plans, taking photographs of the roof, electrical panels within the polyclinic, the electricity utility meter and the proposed location for the PV equipment. During the site visit an overview of the project was given to the senior clerks or the Doctor responsible for the polyclinic. A representative from the Technical Management team at the Ministry of Health (MoH) was present at most of the site assessments.

3. Eunice Gibson Polyclinic Site Assessment

The Eunice Gibson polyclinic is located in Warrens, St. Michael. The PV Support Consultant met with the Senior Clerk Mr. Layne and gave an overview of the project.

The polyclinic has two floors and the roof of the polyclinic consists of a flat concrete roof as well as uPanel metal roof sections. From speaking to the Technical Management at the Ministry of Health, the roof has some leaks. These areas where the leaks are occurring must be addressed before the installation of the PV system takes place. The most suitable location for the PV modules is on the flat concrete sections of the roof.

The inverter, charge controller, batteries and other PV equipment can be installed in a vacant room which is located in the general workers' quarters or in the store room under the stairwell. The more suitable location for the PV equipment would be in the general workers' quarters since this room is not accessible to the public, has enough space for the PV equipment and is ventilated.

The polyclinic has an emergency diesel generator which supplies the entire polyclinic with electricity when an outage occurs.

The electricity bill was collected and the annual electricity consumption at the polyclinic was 129,274 kWh and the average monthly electricity consumption was 10,773 kWh. Figure 1 shows the monthly electricity consumption and the average monthly electricity consumption over a twelve month period. The electrical panel information of the polyclinic can be seen in Table 1. See Appendix VII with the electrical panel photographs for this polyclinic.

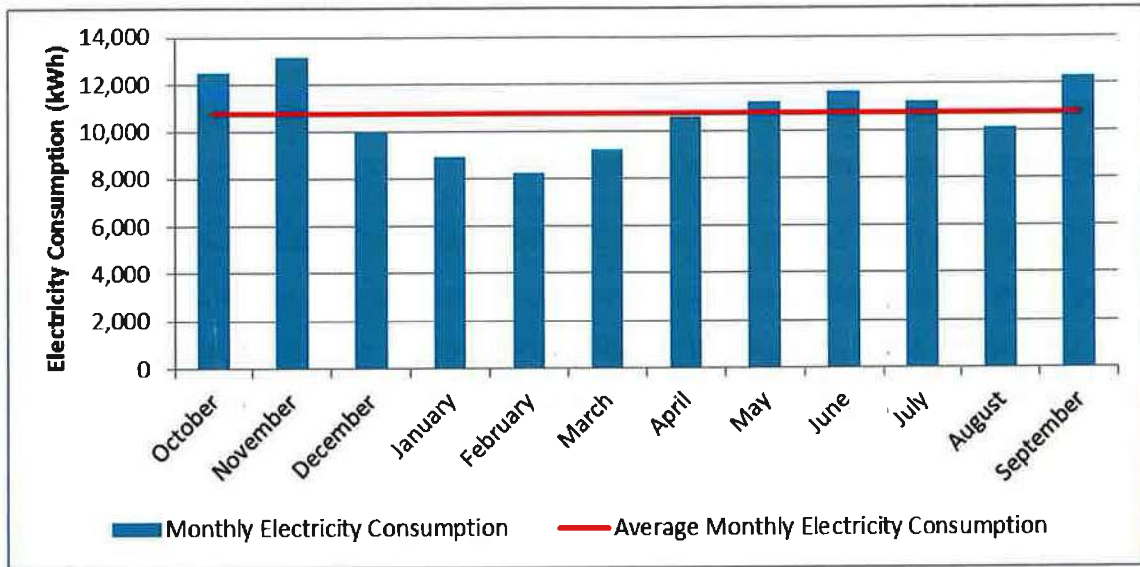


Figure 1: Eunice Gibson Polyclinic monthly electricity consumption

Table 1: Eunice Gibson Polyclinic electrical panel information

Type of Panel	Electrical Panel Location	Panel Directory
Sub Panel	Small Store Room on First Floor	Yes
Sub Panel	Panel Room at Top of Staircase	None
Sub Panel	Maternal Storeroom	None
Sub Panel	Outside Diabetic Patient Office	Yes
Sub Panel	Under Stairwell by Lobby	Yes
Sub Panel	Storeroom Close to Pharmacy	None

3.1 Summary of Findings

Name: Eunice Gibson Polyclinic
 Location: Warrens, St. Michael
 GPS Coordinates: 13° 8'27.44"N; 59° 36'20.91"W



Figure 2: Location of the Eunice Gibson Polyclinic Source: (Google)



Figure 3: Entrance of Eunice Gibson Polyclinic



Figure 3: General workers' quarters - RECOMMENDED



Figure 4: Storeroom under stairwell – Option 2



Figure 4: Roof Section Photograph 1



Figure 5: Roof Section Photograph 2



Figure 6: Utility Meter at Eunice Gibson Polyclinic

4. Randal Philips Polyclinic Site Assessment

The Randal Philips Polyclinic is located Oistins, Christ Church. The PV Support Consultant met with Mr. John Watts the Principal Environmental Officer and the Senior Clerk and gave an overview of the project.

The polyclinic has two floors and roof sections are constructed of uPanel metal sheets. The uPanel metal sheets on the south facing roof appear to be in good condition and this is the most suitable location for the PV modules to be installed.

The inverter, charge controller, batteries and other PV equipment can be installed a spare room which is in close proximity to the main electrical panel. This room is also not accessible to the public, is ventilated and has enough room for the PV equipment.

The polyclinic has an emergency diesel generator which supplies the entire polyclinic with electricity when an outage occurs.

The electricity bill was collected during the site assessment and from the electricity bill the annual electricity consumption at the polyclinic was calculated to be 138,400 kWh and the average monthly electricity consumption was 11,533 kWh. Figure 7 shows the monthly electricity consumption and the average monthly electricity consumption over a twelve month period. The electrical panel information

of the polyclinic can be seen in Table 2. See Appendix V with the electrical panel photographs for this polyclinic.

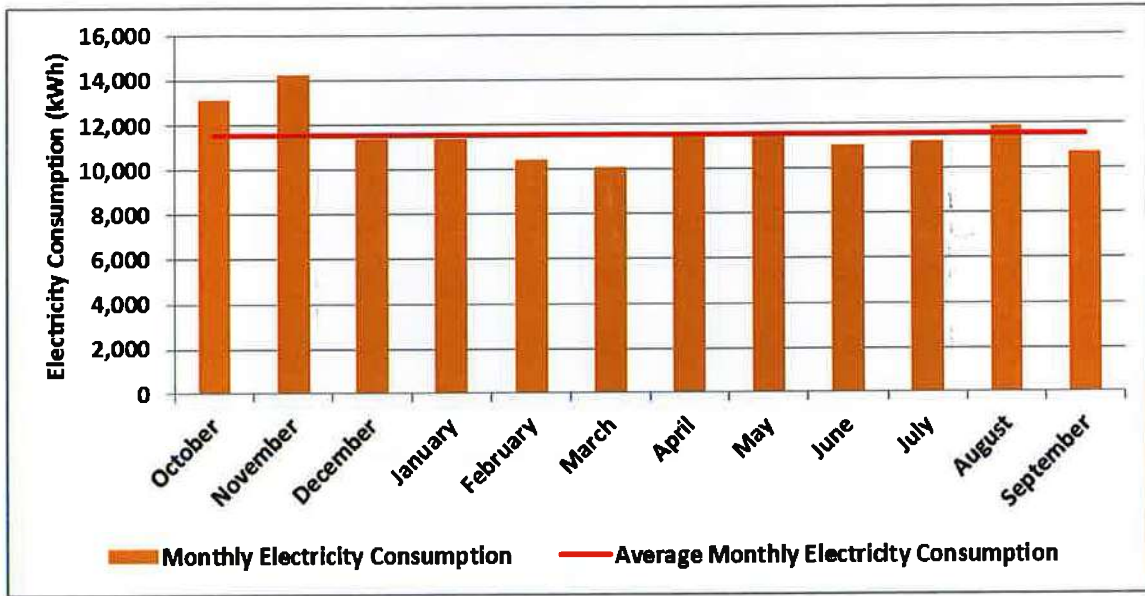


Figure 7: Randal Phillips Polyclinic monthly electricity consumption

Table 2: Randal Philips Polyclinic electrical panel information

Type of Panel	Electrical Panel Location	Panel Directory
Sub Panel	Nursing Office GPO	None
Sub Panel	Waiting Area (west wing)	None
Main Panel	Main Panel Room	None
Sub Panel	Waiting Area (east wing)	None

4.1 Summary of Findings

Name: Randal Phillips Polyclinic
 Location: Oistins, Christ Church
 GPS Coordinates: 13° 8'3.43.41"N; 59° 32'26.76"W



Figure 8: Randal Phillips Polyclinic Location - Source (Google)

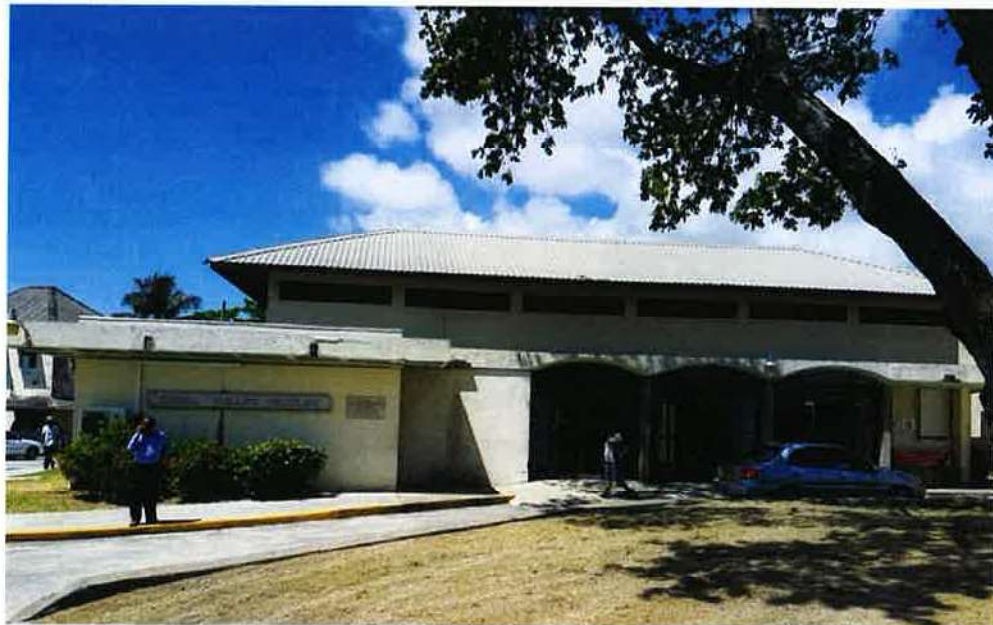


Figure 9: Main Entrance to Randal Philips Polyclinic



Figure 10: Proposed Room for PV Equipment



Figure 11: Utility Meter



Figure 12: South facing roof section



Figure 13: Other south facing section

5. Maurice Byer Polyclinic Site Assessment

The Maurice Byer Polyclinic is located in Church Street, Speightstown St. Peter. The PV Support Consultant met Dr McCollin and gave an overview of the project.

The polyclinic has two floors and the roof sections are constructed of uPanel metal sheets and these sheets appear to be in good condition. The PV modules can be installed on the south-west facing roof. There is enough space to accommodate the PV modules.

The inverter, charger controller, batteries and other PV equipment can be installed in the main electrical room. This room is not accessible to the public, has ventilation and has enough room for the PV equipment.

The polyclinic has an emergency diesel generator which supplies the entire polyclinic with electricity when an outage occurs.

The electricity bill was collected during the site visit and the annual electricity consumption at the polyclinic was calculated to be 129,900 kWh. The electrical panel information of the polyclinic can be seen in Table 3. Figure 14 shows the monthly electricity consumption and the average monthly electricity consumption over a twelve month period. See Appendix IV with the electrical panel photographs for this polyclinic.

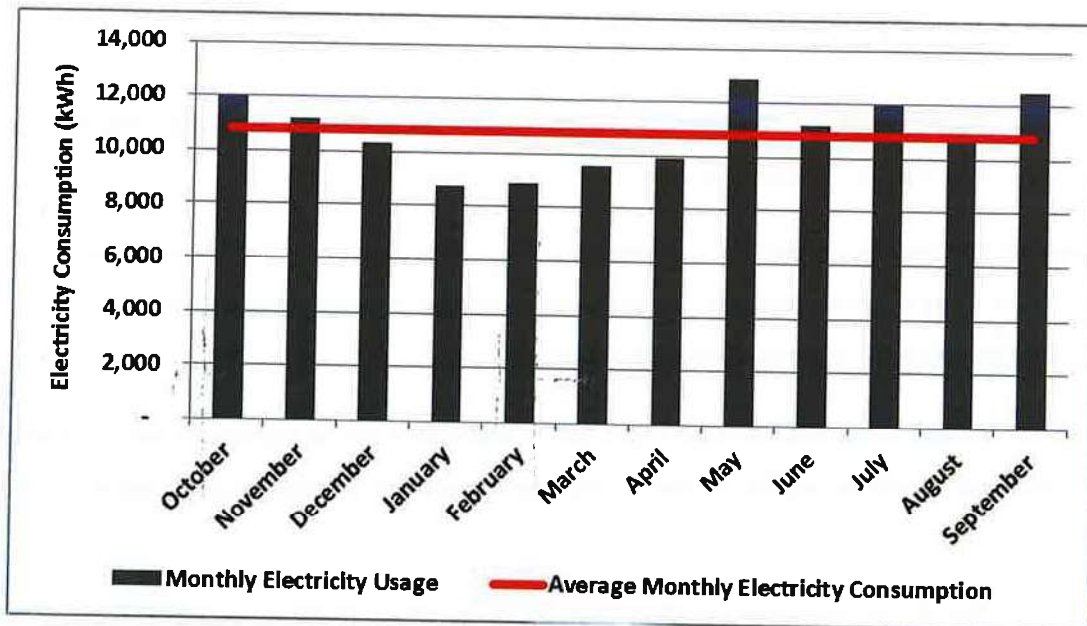


Figure 14: Maurice Byer Polyclinic monthly electricity consumption

Table 3: Maurice Byer Polyclinic electrical panel information

Type of Panel	Electrical Panel Location	Panel Directory
Sub Panel	Administration Hallway - First Floor	None
Sub Panel	Administration Hallway - First Floor	None
Sub Panel	Outside Inspector Office	None
Sub Panel	Waiting Area (Family Planning)	None
Sub Panel	Waiting Area (Family Planning)	None
Sub Panel	Waiting Area (Dental)	None
Sub Panel	Waiting Area (Dental)	None
Main and Sub Panel	Outer Electrical Panel Room	None

5.1 Summary of Findings

Name: Maurice Byer Polyclinic
 Location: Church Street, Speightstown St. Peter
 GPS Coordinates: 13° 15'13.04"N; 59° 38'18.77"W



Figure 15: Maurice Byer Polyclinic location - Source (Google)



Figure 16: Entrance to Maurice Byer Polyclinic



Figure 17: Main electrical panel room - proposed location for PV equipment



Figure 18: Electricity utility meter at Maurice Byer Polyclinic



Figure 19: Roof Section – Photograph 1



Figure 20: Roof Section - Photograph 2



Figure 21: Roof Section – Photograph 3

6. Glebe Polyclinic Site Assessment

The Glebe Polyclinic is located in the Glebe, St. George. The PV Support Consultant met with the Senior Clerk Mr. Sandiford and gave an overview of the project.

The polyclinic is single story building and the roof sections are constructed of uPanel metal sheets. The uPanel sheets appear to be in good condition. The PV modules can be installed on the south facing roof which faces the back of the polyclinic. This roof has enough space to accommodate the solar PV array.

The proposed location for the PV equipment has not yet been identified, since there is no space available in the polyclinic to house the PV equipment. It was suggested by Mr. Thorne of the Technical Management form the MoH that a room be constructed to house the PV equipment.

The polyclinic has an emergency diesel generator which supplies the entire polyclinic with electricity when an outage occurs.

The electricity bill was collected during the site visit and the annual electricity consumption at the polyclinic was calculated to be 98,719 kWh and the average monthly electricity consumption was 8,227 kWh. The electrical panel information of the polyclinic can be seen in Table 4. Figure 22 shows the monthly electricity consumption and the average monthly electricity consumption over a twelve month period. See Appendix III with the electrical panel photographs for this polyclinic.

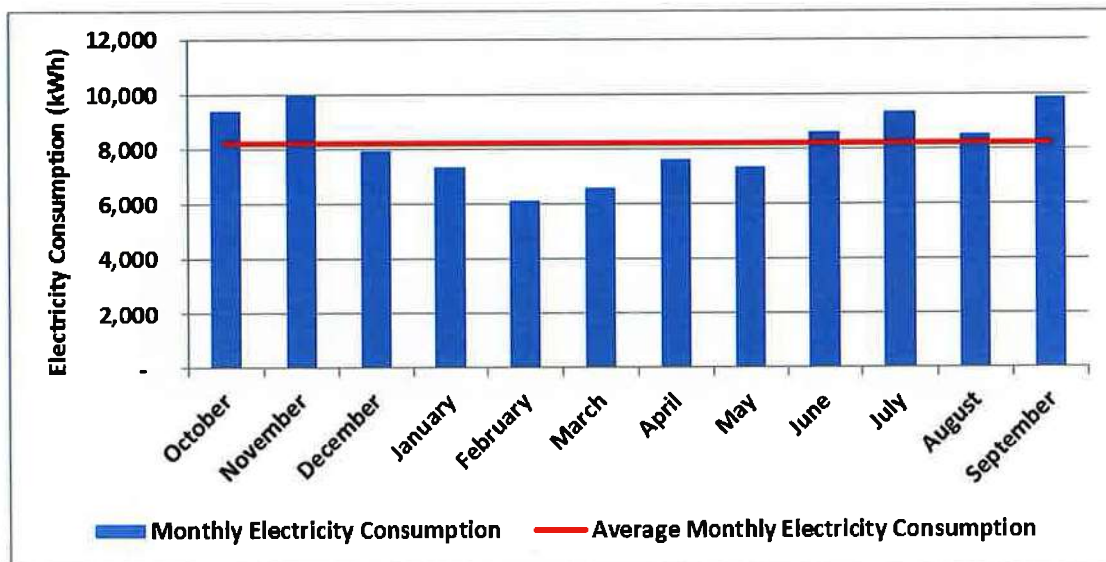


Figure 22: Glebe Polyclinic monthly electricity consumption

Table 4: Glebe Polyclinic electrical panel information

Type of Panel	Electrical Panel Location	Panel Description
Sub Panel (2)	Outside family planning section	None
Sub Panel	Records room	Yes
Main Panel	Outer Electrical Panel Room	None

6.1 Summary of Findings

Name: Glebe Polyclinic
Location: Glebe St. George
GPS Coordinates: 13° 8'6.14" N; 59° 33'48.26" W

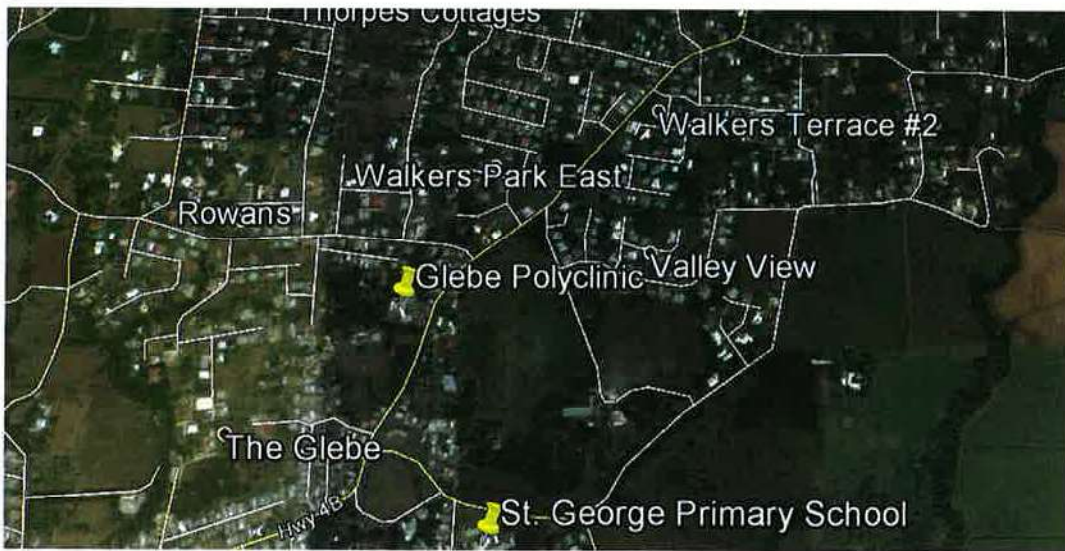


Figure 23: Glebe Polyclinic location - Source (Google)



Figure 24: Main Entrance of the Glebe Polyclinic



Figure 25: Electricity utility meter at the Glebe Polyclinic



Figure 26: Roof Section - Photograph 1



Figure 27: Roof Section - Photograph 2



Figure 28: Roof Section - Photograph 3

7. Edgar Cochrane Polyclinic Site Assessment

The Edgar Cochrane Polyclinic is located at Wildey, St. Michael. The PV Support Consultant met with the Senior Clerk June Alleyne and gave an overview of the project.

The polyclinic is a single story building with a flat concrete roof and roof sections constructed of uPanel metal sheets. The most suitable place to install the PV modules would be on the flat concrete roof, since there is enough space to accommodate the modules and the modules could be oriented to face south for maximum system production.

There are no rooms within the polyclinic where the PV equipment can be housed. It was suggested that a room be constructed to store the PV equipment. The location of room is to be determined.

The polyclinic has an emergency diesel generator which supplies the entire polyclinic with electricity when an outage occurs.

The electricity bill was collected during the site visit and the annual electricity consumption at the polyclinic was calculated to be 103,657 kWh and the average monthly electricity consumption was 8,638 kWh. Figure 29 shows the monthly electricity consumption and the average monthly electricity consumption over a twelve month period. The electrical panel information of the polyclinic can be seen in Table 5. See Appendix II with the electrical panel photographs for this polyclinic.

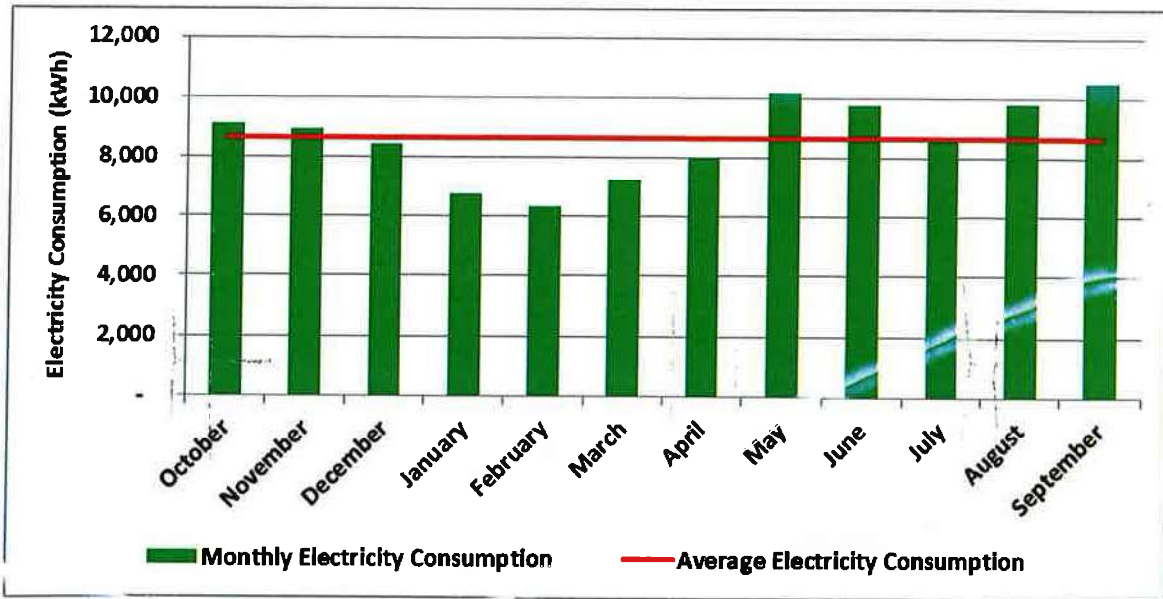


Figure 29: Edgar Cochrane Polyclinic monthly electricity consumption

Table 5: Edgar Cochrane Polyclinic electrical panel information

Type of Panel	Electrical Panel Location	Panel Description
Main Electrical Panel	Outer Room	-
Sub Electrical Panel	Waiting Area West Wing	No
Sub Electrical Panel	Waiting Area East Wing	No
Sub Electrical Panel	Outside the Nursing GPO Office	No

7.1 Summary of Findings

Name: Edgar Cochrane Polyclinic
 Location: Wildey, St. Michael
 GPS Coordinates: 13° 5'33.58"N; 59° 35'10.47"W

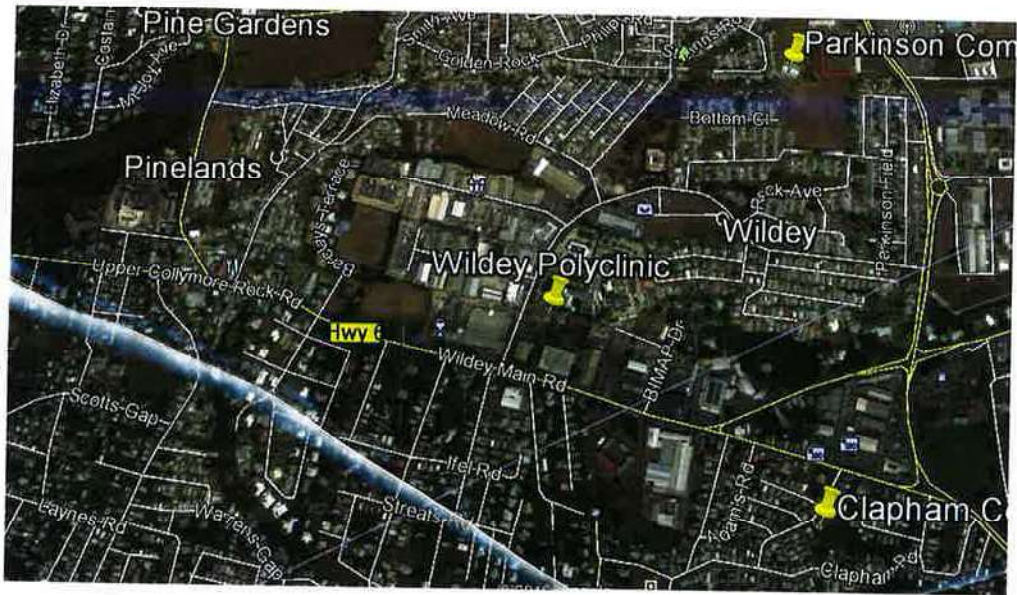


Figure 30: Google Map Location of Edgar Cochrane Polyclinic



Figure 31: Front Entrance to the Edgar Cochrane Polyclinic



Figure 32: Electricity utility meter at the Edgar Cochrane Polyclinic



Figure 33: Roof Section - Photograph 1



Figure 34: Roof Section - Photograph 2

8. Brandford Taitt Polyclinic Site Assessment

The Brandford Taitt Polyclinic which is located in the parish of St. Michael. The PV Support Consultant met with the Senior Clerk and gave an overview of the project.

The polyclinic has two floors and the roof structure is constructed of uPanel metal sheets. The south facing roof should be able to accommodate the 5 kW of PV modules. However there are some holes in the uPanel sheets which should be repaired before installation takes place.

The inverter, charge controller, batteries and other PV equipment can be installed in the air conditioning equipment plant room which is located on the first floor of the polyclinic. It has adequate space for the PV equipment, is ventilated and not accessible to the public.

The polyclinic has an emergency diesel generator which supplies the entire polyclinic with electricity when an outage occurs.

The electricity bill was collected and the annual electricity consumption at the polyclinic was 264,200 kWh and the average monthly electricity consumption was 22,017 kWh. Figure 35 shows the monthly electricity consumption and the average monthly electricity consumption over a twelve month period. The electrical panel information of the polyclinic can be seen in Table 6. See Appendix I with the electrical panel photographs for this polyclinic.

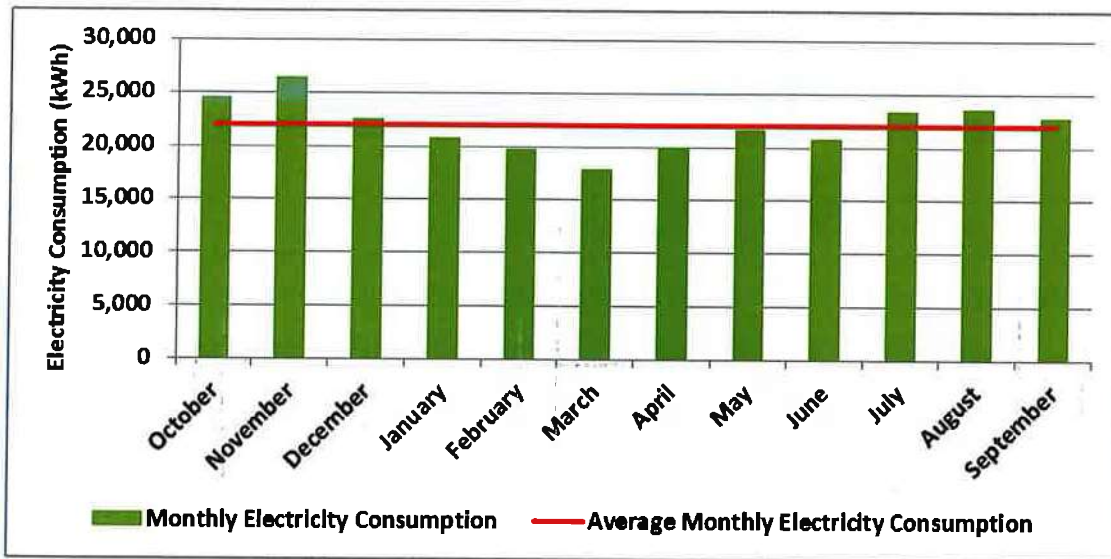


Figure 35: Brandford Taitt Polyclinic monthly electricity consumption

Table 6: Brandford Taitt Polyclinic electrical panel information

Type of Panel	Electrical Panel Location	Panel Schedule
(2) Sub Panels	Kitchen / Lunchroom	Both sub panels have schedules
(2) Sub Panels	Air Conditioning plant room	One of the panels has a schedule
(2) Sub Panels	West wing (opposite Doctors office)	Both sub panels have schedules
(2) Sub Panels	East wing (in Inspectors store room)	Both sub panels have schedules
Main Panel	West wing Electrical Room	Main panel has a schedule

8.1 Summary of Findings

Name: Brandford Taitt Polyclinic
 Location: Black Rock, St. Michael
 GPS Coordinates: 13° 7'5.40"N; 59° 37'5.87"W



Figure 36: Location of the Branford Taitt Polyclinic - Source (Google)



Figure 37: Main Entrance at the Branford Taitt Polyclinic



Figure 38: Air conditioning plant room – proposed location for PV equipment



Figure 39: BLPC Utility Meter at Brandford Taitt Polyclinic



Figure 40: Roof Section - Photograph 1



Figure 41: Roof Section - Photograph 2



Figure 42: Roof Section - Photograph 3

9. St. John Polyclinic Site Assessment

The St. John polyclinic is located in Glebe, St. John. It is the newest polyclinic having being opened in the last quarter of 2015 and houses the Constituency office and a library. The PV Support Consultant met with Dr Babb and Dr Edwards and gave an overview of the project.

The building which houses the polyclinic has multiple floors and the roof is constructed of uPanel metal sheets. The most suitable location for the PV modules is on the south facing roof which has enough space to accommodate the PV modules. The roof is structurally sound.

The inverter, charge controller, batteries and other PV equipment can be installed in an area which is located in archives. This area is not accessible to the public, is ventilated and has enough room to accommodate the PV equipment.

The polyclinic has an emergency diesel generator which supplies the entire polyclinic with electricity when an outage occurs.

The electricity bill was collected during the site assessment and from the electricity bill the annual electricity consumption at the polyclinic was 339,600 kWh and the average monthly electricity consumption was 28,300 kWh. Figure 43 shows the monthly electricity consumption and the average monthly electricity consumption over a twelve month period. The electrical panel information of the

polyclinic can be seen in Table 7. See Appendix VI with the electrical panel photographs for this polyclinic.

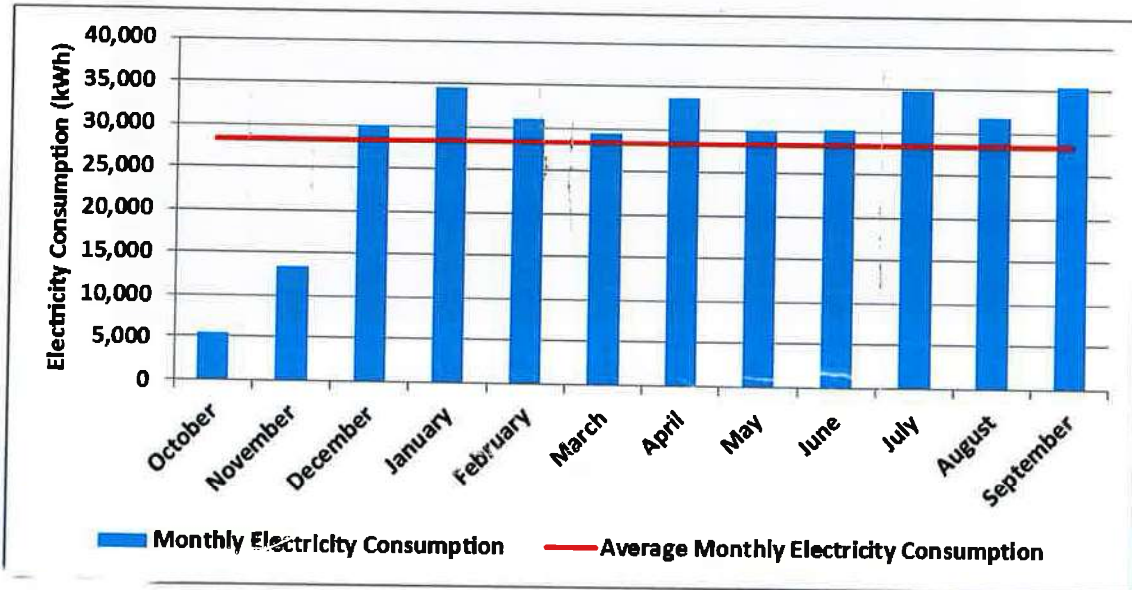


Figure 43: St. John Polyclinic monthly electricity consumption

Table 7: St. John Polyclinic electrical panel information

Type of Panel	Electrical Panel Location	Panel Schedule
Main electrical panel	Main electrical room	The main electrical panel is labelled
Main electrical Panel	Opposite Telecoms room	No panel schedule
(3) Sub Panels	Environmental Department	One of the sub panels has a schedule the other two do not
(2) Sub Panels	Gym Area	Both have panels have schedules
(3) Sub Panels	Hallway by Radiology	One of the sub panels has a schedule the other two do not
(2) Sub Panels	Opposite Library	Both sub panels have schedules
Sub Panel	Dialysis Department	Sub panel has a panel schedule
(3) Sub Panels	Main clinic area (GP Area)	All three have panel schedules
(3) Sub Panels	Outside Lunch room	Two of the three panels have schedules

9.1 Summary of Findings

Name: St. John Polyclinic
Location: Glebe, St. John
GPS Coordinates: 13° 10'54.83"N; 59° 29'47.38"W



Figure 44: Location of the St. John Polyclinic



Figure 45: Main Entrance at the St. John Polyclinic



Figure 46: Utility meter at the St. John Polyclinic equipment



Figure 47: Archives section - proposed room for PV



Figure 48: Roof Section - Photograph 1

10. St. Philip Polyclinic Site Assessment

The St. Philip polyclinic is located in Six Roads, St. Philip. At the time of the visit the Senior Clerk was out of the office and the Clerk Mr. Brathwaite showed the PV Support Consultant around the polyclinic.

The polyclinic has two buildings located on the site. The main building consists of the administration department and doctors' offices and a newer building which houses the environmental department of the polyclinic. Both roofs are constructed of uPanel metal sheets. The main building is the larger of the two and has two floors. The environmental department office is a single story building.

The most suitable location for the PV modules is on the south facing roof that faces the main entrance to the polyclinic. The roof is constructed of uPanel metal sheets.

The inverter, charge controller, batteries and other PV equipment can be installed either under the stairwell or in a section of a meeting room just outside the Senior Health Sister's office. This room is not accessible to the public, is ventilated and has enough space for the PV equipment.

The polyclinic has an emergency diesel generator which supplies the entire polyclinic with electricity when an outage occurs.

The electricity bills were collected during the site assessment. Both the main polyclinic and the building which houses the environmental department have separate utility meters. The annual electricity consumption of the main polyclinic was 82,327 kWh and the annual electricity consumption of the environmental department was 21,275 kWh. The combined the total annual consumption was 103,602 kWh. The average monthly electricity consumption of the main polyclinic was 6,861 kWh and for the environmental department it was 1,773 kWh. Figure 49 and Figure 50 show the monthly electricity consumption and the average monthly electricity consumption for the main and environmental buildings of the St. Philip polyclinic. The electrical panel information of the polyclinic can be seen in Table 8. See Appendix VII with the electrical panel photographs for this polyclinic.

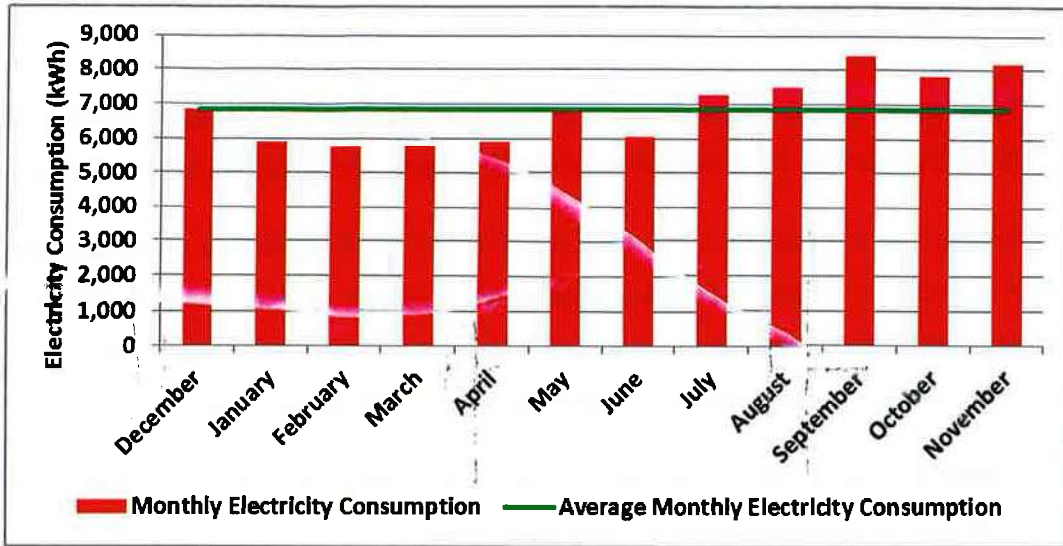


Figure 49: St. Philip Polyclinic (Main Building) monthly electricity consumption

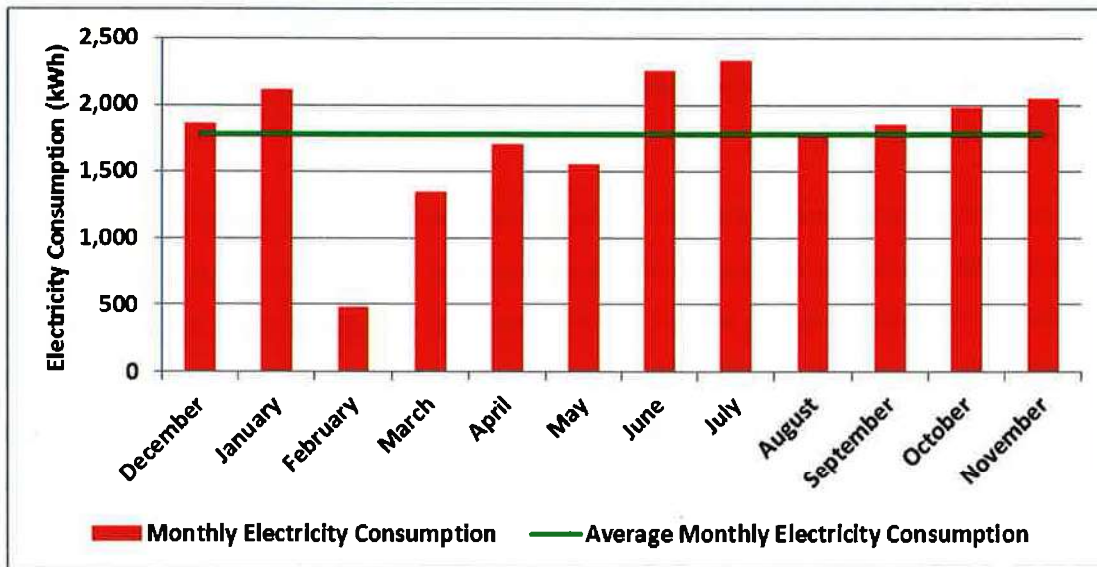


Figure 50: St. Philip Polyclinic (Environmental Department) monthly electricity consumption

Table 8: St. Philip Polyclinic electrical panel information

Type of Panel	Electrical Panel Location	Panel Schedule
Sub Panel	First Floor Staircase to Admin Office	No panel schedule
Main Panel	Close to Admin Office	No panel schedule
Sub Panel	Nutrition room	No panel schedule
Sub Panel	Waiting Area	No panel schedule
(2) Sub Panels	Environmental Department	Both have panel schedules

10.1 Summary of Findings

Name: St. Philip Polyclinic
Location: Six Roads, St. Philip
GPS Coordinates: 13° 7'5.03"N; 59° 28'34.86"W



Figure 51: Main Entrance to St. Philip Polyclinic



Figure 52: St. Philip Polyclinic location - Source (Google)



Figure 53: Proposed room for PV equipment



Figure 54: Utility meter at St. Philip Polyclinic



Figure 55: Roof Section - Photograph 1



Figure 56: Roof Section - Roof Section

11. Winston Scott Polyclinic Site Assessment

The Winston Scott polyclinic is located in Ladymeade Gardens Jemmotts Layne, St. Michael. The PV Support Consultant met with the Senior Clerk and the Doctor in charge of the polyclinic and discussed the project.

The building which houses the polyclinic has two floors and roof sections which are constructed of concrete and uPanel metal sheets. The most suitable location for the PV modules is on the south west facing uPanel lean-to roof section.

The inverter, charge controller, batteries and other PV equipment can be installed in server room which is in close proximity to the main electrical panel. This room is also not accessible to the public.

The polyclinic has an emergency diesel generator which supplies the entire polyclinic with electricity when an outage occurs.

The electricity bill was collected during the site assessment and from the electricity bill the annual electricity consumption at the polyclinic was 438,900 kWh and the average monthly electricity consumption 39,900 kWh. Figure 57 shows the monthly electricity consumption and the average electricity consumption over a twelve month period. The utility meter was not accessible since it is located in a room that is locked. The electrical panel information of the polyclinic can be seen in Table 9. See Appendix IX with the electrical panel photographs for this polyclinic.

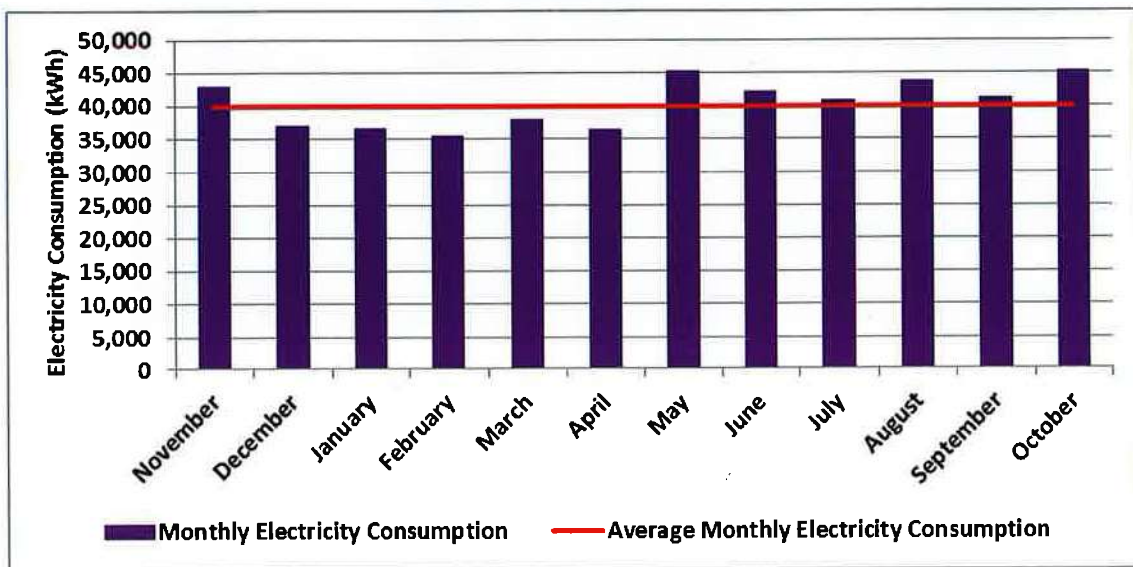


Figure 57: Winston Scott Polyclinic monthly electricity consumption

Table 9: Winston Scott Polyclinic electrical panel information

Type of Panel	Electrical Panel Location	Panel Schedule
Main Panel	Main electrical room	No panel schedule
Sub Panel	Main Hallway (next to general purpose room)	No panel schedule
(2) Sub Panels	Close to side exit	No panel schedules
(2) Sub Panels	Vaccine room	One of the sub panels has a schedule the other does not
Sub Panel	Fast track waiting area	No panel schedule
Sub Panel	Lab waiting area	No panel schedule
Sub Panel	Medical Prep Area	No panel schedule
Sub Panel	Sterilization Area	Has a panel schedule
Sub Panel	TB Department	No panel schedule
Sub Panel	Outside General Office	No panel schedule
Sub Panel	Store room (Inspectors Office)	Has a panel schedule

11.1 Summary of Findings

Name: Winston Scott Polyclinic
 Location: Ladymeade Gardens Jemmotts Layne, St. Michael
 GPS Coordinates: 13° 5'32.54"N; 59° 36'25.76"W



Figure 58: Winston Scott Polyclinic location - Source (Google)



Figure 59: Main entrance at the Winston Scott Polyclinic



Figure 60: Server room - proposed room for PV equipment at Winston Scott Polyclinic



Figure 61: Roof Section

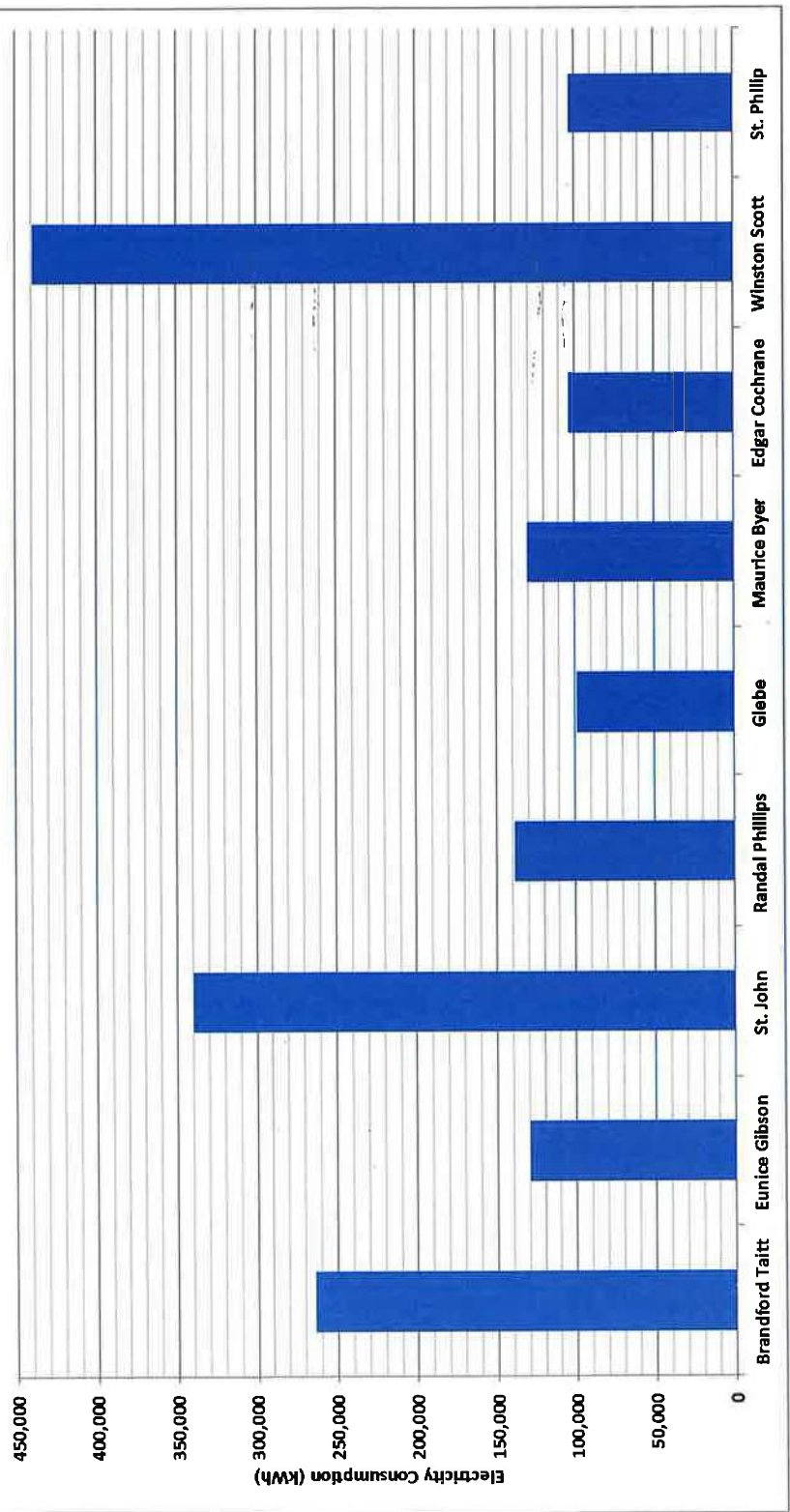
12. Summary

Table 10: Summary of the Nine (9) Polyclinics Site Assessment Information

Name of Polyclinic	Location of Polyclinic	Roof Structure	Integrity of Roof	Location of Room for PV Equipment	Electrical Panel Information	Utility Meter Number	Annual Electricity Consumption
1 Brandford Taitt	Black Rock St. Michael	uPanel metal sheets	Roof is in relatively good condition but has leaks	Air conditioning plant room	All electrical panels have schedules	V06758	264,200 kWh
2 St. John	Glebe St. John	uPanel metal sheets	Roof is in excellent condition	Area in archives section	Not all electrical panels have schedules	V06628	339,600 kWh
3 St. Philip	Six Roads St. Philip	uPanel metal sheets	Roof is in good condition	Storeroom under stairwell or meeting room outside the Senior Health Sister's office	Not all electrical panels have schedules	V04374 (Main Building) and V02222 (Environmental Department Building)	82,327 kWh (Main Building) and 21,275 kWh (Environmental Department Building)
4 Winston Scott	Ladymeade Gardens Jemmotts Layne St. Michael	uPanel metal sheets & concrete	Roof is in relatively good condition	Server room	Not all electrical panels have schedules	V04862	438,900 kWh
5 Eunice Gibson	Warrens St. Michael	uPanel metal sheets & concrete	Roof is in relatively good condition but has some leaks	Area in general worker quarters or under stairwell	Not all electrical panels have schedules	V03540	129,274 kWh

Name of Polyclinic	Location of Polyclinic	Roof Structure	Integrity of Roof	Location of Room for PV Equipment	Electrical Panel Information	Utility Meter Number	Annual Electricity Consumption
6	Randal Phillips Oistins Christ Church	uPanel metal sheets	Roof is in good condition	No available room	Not all electrical panels have schedules	D32774	138,400 kWh
7	Maurice Byer Church Street Speightstown St. Peter Glebe St. George	uPanel metal sheets	Roof is in good condition	Main electrical room	None of electrical panels have schedules	V04174	129,900 kWh
8	Glebe	uPanel metal sheets	Roof is in good condition	No available rooms	Not all electrical panels have schedules	V05192	98,718 kWh
9	Edgar Cochrane Willey St. Michael	uPanel metal sheets & concrete	Roof is in good condition	No rooms available	Not all electrical panels have schedules	V05281	103,657 kWh

Polyclinics Annual Electricity Consumption Comparison



13. Conclusion

The nine (9) polyclinics assessed were:

- Eunice Gibson
- Randal Phillips
- Maurice Byer
- Glebe
- Edgar Cochrane
- St. John
- St. Philip
- Winston Scott

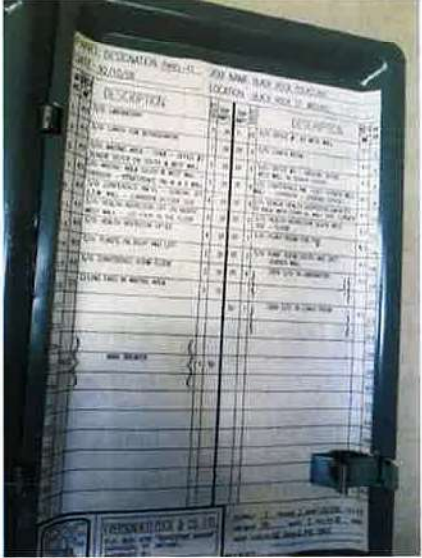
The roofs at these polyclinics were made of concrete or uPanel metal sheets or a combination of both. Different roof types require different methods of mounting the PV modules onto their structure. The cost of mounting the PV systems may therefore differ. From a visual perspective and in discussions with the relevant maintenance/technical persons at the polyclinics, most of the roofs are structurally sound. However, there are some holes in the uPanel metal sheets at the Eunice Gibson and Brandford Taitt polyclinics that should be addressed before installation takes place.

All nine (9) polyclinics have emergency backup generators. These emergency backup generators supply the full electrical loads of the polyclinic when an outage occurs. The PV systems to be installed will not be large enough to provide 100% back up power to the polyclinics in the event there is an outage. The design of the PV systems must take this into account. The PV system should be designed to operate with the existing emergency supply (i.e. the diesel generator) to reduce the amount of fuel consumed during an outage.

The electrical panel information from this assessment highlights the fact that most of the panel schedules or descriptions (which helps determine which loads are connected to what circuit) are missing. This would severely impact the project if the PV system is selected to provide power to the critical loads within the polyclinic, as these panel schedules would have to be created in order for this work to be carried out.

At Edgar Cochrane and the Glebe polyclinics structures will have to be built to accommodate the PV equipment. At the other seven (7) polyclinics there are existing rooms available for the PV equipment. Depending on the specifications of the PV equipment it can be kept on the outside of the polyclinics in a location which is deemed safe.

Appendix I – Brandford Taitt Polyclinic Electrical Panel Photographs



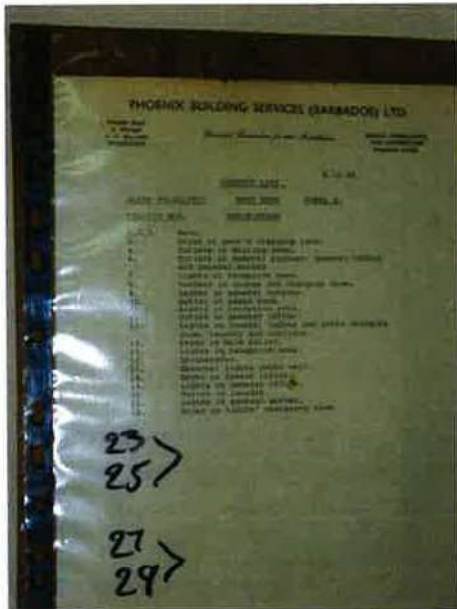


PANEL DESIGNATION		PANEL MOP JOB NAME	BRACK BOOK	DATE	DATE
DATE		02/18/14	LOCATION	BLACK ROCK PT. MICHIGAN	
NO	DESCRIPTION	DATE			
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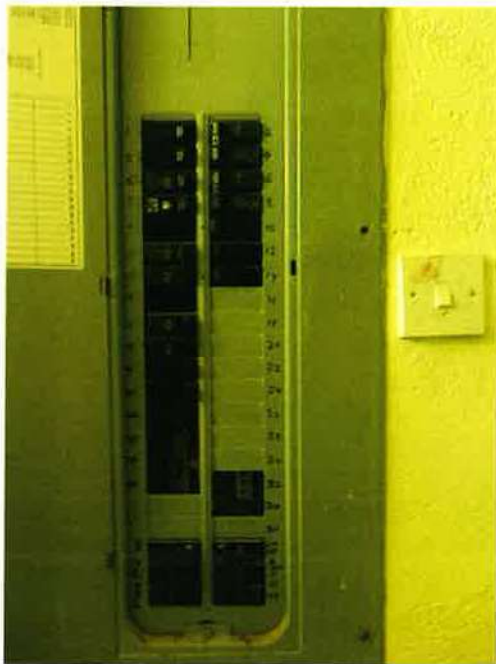
Appendix II - Edgar Cochrane Polyclinic Electrical Panel Photographs



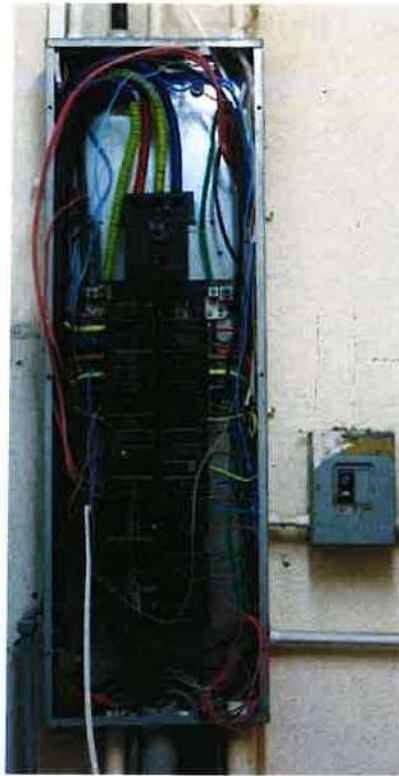
Appendix III - Glebe Polyclinic Electrical Panel Photographs



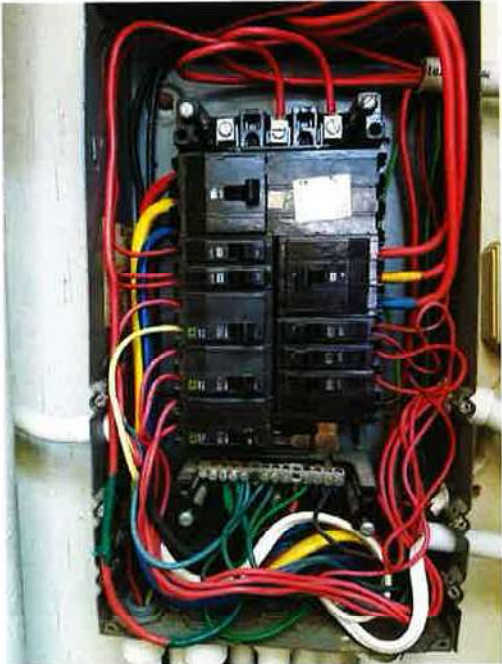
Appendix IV- Maurice Byer Polyclinic Electrical Panel Photographs







Appendix V - Randal Phillips Polyclinic Electrical Panel Photograph





Appendix VI - St. John Polyclinic Electrical Panel Photographs



PANEL SCHEDULE

PROJECT : ST. JOHN POLYCLINIC PANEL - PLC

CABLE	POLES	OWN	DESCRIPTION	CCT	C.B.	LOAD	C.B.	CCT	DESCRIPTION	Orlets	POLES	CABLE
AWG				No.	RATING	R	Y	D	RATING	No.		MM
10AWG	1	2	OLETS: RECEPTION	1	20				20	2		10AWG
10AWG	1	3	OLETS: INSPECTORATE	3	20				20	4		10AWG
10AWG	1	3	OLETS: INSPECTORATE	3	20				20	6		10AWG
10AWG	1	3	OLETS: INSPECTORATE	3	20				20	6		10AWG
	1	1	Cabinet	5	20				20	8		10AWG
			SPACE	9						10		
			SPACE	11						12		
			SPACE	13						14		
AWG	3		MAIN BREAKER	15	30					16		
				17						18		
SUPPLY 3 PHASE 4 WIRE 208Y/120 VOLTS				FLUSH MTG				TMR SALES & SERVICE LTD. FONTABELLE, ST. MICHAEL				
MAIN BKR 30 AMPS 3 POLES BUS 100 AMPS				SURFACE MTG				August 22, 2011				
MAIN CABLE 4c #6AWG THWN CABLE IN 2" PVC CONDUIT				LUGS ONLY				Located in Inspectorate on lower ground floor				



PANEL SCHEDULE

PROJECT : ST. JOHN POLYCLINIC PANEL - GL

CABLE	POLES	C/sets	DESCRIPTION	CCT No.	C.B. RATING	LOAD R	Y	B	C.B. RATING	CCT No.	DESCRIPTION	C/Wg	POLES	CABLE MM
10AWG	1	4	OLETS. GYM OFFICE	1	20				20	2	OLETS. INDOOR BICYCLE	1	1	10AWG
10AWG	1	2	OLETS. TREADMILLS	3	20				20	4	OLETS. RECLUMBENT ROCKE	2	1	10AWG
10AWG	1	1	OLETS. TREADMILLS	5	20				20	6	OLETS. STRENGTH TRAINING	3	1	10AWG
10AWG	1	1	OLETS. WATER COOLER	7	20				20	8	OLETS. M & F TOILETS	1	1	10AWG
10AWG	1	1	OLETS. VENDING MACHINE	9	20				20	10	OLETS. HANDICAP TOILETS	1	1	10AWG
10AWG	1	1	OLETS. VENDING MACHINE	11	20					12	SPACE			
10AWG	1	6	OLETS. GYM OFFICE	13	20					14	SPACE			
			SPARE	15	20					16	SPACE			
			SPARE	17	20					18	SPACE			
			SPARE	19	20					20	SPACE			
			SPACE	21						22	SPACE			
			SPACE	23						24	SPACE			
			SPACE	25						26	SPACE			
4AWG	3		MAIN BREAKER	27	20					28	SPACE			
				29						30	SPACE			
SUPPLY 3 PHASE 4 WIRE 208Y/120 VOLTS				FLUSH MTG				TMR SALES & SERVICE LTD. FONTABELLE, ST. MICHAEL						
MAIN BKR 20 AMPS 3 POLES BUS 200 AMPS				SURFACE MTG				August 22, 2011						
MAIN CABLE 4C #14WG THWN - each IN 2" PVC CONDUIT				LUGS ONLY				Located In gym 2 nd floor						

PANEL SCHEDULE

PROJECT : ST. JOHN POLYCLINIC PANEL - G

CABLE	MM	POLES	CIRTS	DESCRIPTION	CCT No	C.B. LOAD			C.B. RATING	CCT No	DESCRIPTION	CIRTS	POLES	CABLE MM
						R	Y	B						
									15	2	LTS: GYM	5	1	12AWG
10AWG	1	1		O'LETS: EQUIPMENT	1	20			15	4	LTS: GYM	5	1	12AWG
10AWG	1	1		O'LETS: EQUIPMENT	3	20			15	6	LTS: GYM	5	1	12AWG
10AWG	1	1		O'LETS: EQUIPMENT	5	20			15	8	LTS: M & F TOILETS, CORR & HCAP	7	1	12AWG
10AWG	1	1		HAND DRYER	7	20			15	10	LTS: EXIT SIGNS	3	1	12AWG
10AWG	1	1		HAND DRYER	9	20				12	SPACE			
10AWG	1	1		HAND DRYER	11	20				14	SPACE			
				SPACE	13					16	SPACE			
10AWG	1	1		FCU PC 8 (L)	15	20				18	SPACE			
10AWG	1	1		FCU PC 9 (L)	17	20				20	SPACE			
10AWG	1	1		FCU GYM 2 (L)	19	20				22	SPACE			
10AWG	1	1		FCU GYM 1 (L)	21	20				24	SPACE			
				SPACE	23					25				
				SPACE	25				50	28	MAIN BREAKER			4AWG
				SPACE	27					30				
				SPACE	29									

TMR SALES & SERVICE LTD. FONTABELLE, ST. MICHAEL
August 22, 2011
Located in Gym

SUPPLY: 3 PHASE 4 WIRE 208Y/120 VOLTS
 MAIN BKR 50 AMPS 3 POLES BUS 150 AMPS
 MAIN CABLE 4C 4AWG THWN CABLE IN 2" PVC CONDUIT

FLUSH MTG
 SURFACE MTG
 LUGS ONLY

PANEL SCHEDULE

PROJECT / ST. JOHN POLYCLINIC PANEL - B/C

CABLE	MM	POLES	CIRTS	DESCRIPTION	CCT No	C.B. LOAD			C.B. RATING	CCT No	DESCRIPTION	CIRTS	POLES	CABLE MM
						R	Y	B						
									20	1	USED INTERNET DESKTOP			
10AWG	1	2		O'LETS CHILDREN LIBRARY	1	20			20	4	USED BY CONSULTANT			
10AWG	1	3		O'LETS INFORMATION DESK	3	20			20	4	USED BY CONSULTANT			
				SPACE	5					6	SPACE			
				SPACE	7					8	SPACE			
				SPACE	9					10	SPACE			
				SPACE	11					12	SPACE			
				SPACE	13					14	SPACE			
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				SPACE	17				30	18	SPACE			
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				SPACE	207					208	SPACE			
				SPACE	209					210	SPACE			
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PANEL SCHEDULE

PANEL - BL

PROJECT : ST. JOHN POLYCLINIC

CABLE	MM	POLES	O/lets	DESCRIPTION	CCT	LOAD			C.B	CCT	DESCRIPTION	O/lets	POLES	CABLE
					No.	RATING	R	V	B	RATING				
10AWG	1	3		O/LETS: ELEG & AC RM & STORAGE	1	20				20	2			
10AWG	1	5		O/LETS: CHILDREN STORIES	3	20				20	4			10AWG
10AWG	1	5		O/LETS: INFORMATION DESK	5	20				20	6			10AWG
10AWG	1	1		O/LETS: PHOTO COPIER	7	20				20	8			10AWG
10AWG	1	1		O/LETS: PRINTERS	9	20				20	10			10AWG
10AWG	1	5		O/LETS: MAIN LIBRARY	11	20				20	12			10AWG
10AWG	1	2		O/LETS:	13	20				20	14			10AWG
				OUTLETS SPACE STOKY TELUM	15						18			
				OUTLETS SPACE IT	17						18			
				OUTLET SPACE IT/PANEL ROOM	19					30	20			
				SPACE	21						22			
				SPACE	23						24			10AWG
				SPACE	25						26			
				SPACE	27	30					28			
				SPACE	29						30			
10AWG				400V BREAKER										8 AWG

SUPPLY 3 PHASE 4 WIRE 208Y/120 VOLTS
 MAIN BKR 30 AMP 3 POLES BUS 150 AMP
 MAIN CABLE 8 AWG THWN CABLE IN 2" PVC CONDUIT

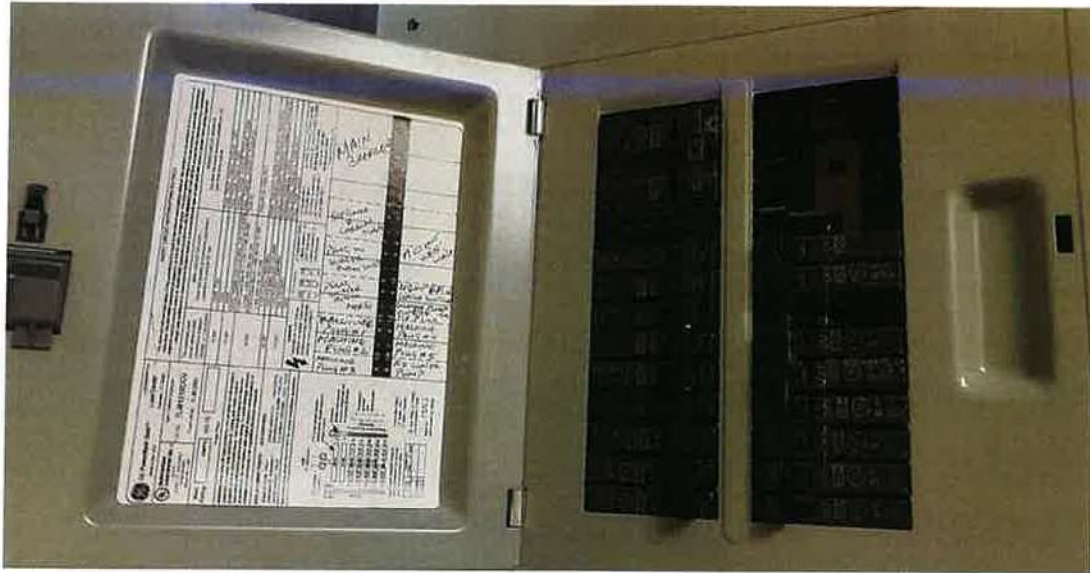
FLUSH MTG
 SURFACE MTG
 LUGS ONLY

TMR SALES & SERVICE LTD. FONTABELLE, ST. MICHAEL
 August 22, 2011
 Located in Library and fed from panel B via TX-3



PROJECT : ST. JOHN POLYCLINIC										PANEL SCHEDULE									
										PANEL - A1									
CABLE	MM	POLES	Olets	DESCRIPTION	CCT No	C.B. RATING	LOAD	R	Y	B	C.B. RATING	CCT No	DESCRIPTION	Olets	POLES	CAB			
10AWG	1	4	4	OLETS: CORR. MEETING RM & OFFICE	1	20					20	1	OLETS: PRINT RM, RECEPTION & LOBBY	5	1	10AWG			
10AWG	1	5	5	OLETS: CONST. COUNCIL OFF & WAITING	3	20					20	4	OLETS: PRINT RM	2	1	10AWG			
10AWG	1	2	2	OLETS: MALE & FEMALE TOILETS	5	20					20	6	OLETS: WELFARE DEPT & WAITING	3	1	10AWG			
10AWG	1	2	2	OLETS: LUNCH RM W 9PCL	7	20					20	8	OLETS: WELFARE DEPT & OFFICE	5	1	10AWG			
10AWG	1	1	1	OLETS: FRIDGE - LUNCH RM	9	20					20	12	OLETS: HANDICAP TOILETS	1	1	10AWG			
	1			SPARE	11	20						14	WASH ROOMS	1	1	10AWG			
	1			SPARE	13	20						16	SPACE						
	1			SPARE	15	20						18	SPACE						
10AWG	1	4	4	OLETS: MEETING RM	17	20					20	20	SPACE						
10AWG	1	2	2	OLETS: TRAINING LAB	19	20					20	22	SPACE						
10AWG	1	4	4	OLETS: TRAINING LAB	21	20					20	24	SPACE						
				2 MAIN STAIRS (MAN)	23	60					20	26							
				DOWN STAIRS (WOMEN)	25	60					20	28							
				SPACE	27						20	30	MAIN BREAKER						
				SPACE	29						20	32							
SUPPLY 3 PHASE 4 WIRE 208Y/120 VOLTS					FLUSH MTS					TMR SALES & SERVICE LTD. FONTABELLE, ST. MICHAEL									
MAIN BKR 50 AMPS 3 POLES BUS 150 AMPS					SURFACE MTS					August 22, 2011									
MAIN CABLE 2# 10AWG THWN					LUGS ONLY					Located in electrical room on lower level									

PROJECT : ST. JOHN POLYCLINIC										PANEL SCHEDULE									
										PANEL - A									
OLETS	DESCRIPTION	CCT NO	C.B. RATING	C.B. RATING	CCT NO	DESCRIPTION	OLETS												
1	OLETS LUNCH RM	1	20	15	2	LIGHTS - SANITATION, BLEACH, COUNSELING	5												
	=	3		15	4	LIGHTS - CONSULTATION COUNCIL OFFICE	5												
1	HAND DRYER	5	20	15	6	LIGHTS - LUNCH RM, PRINT RM DATA	5												
1	HAND DRYER	7	20	15	8	LIGHTS - WAITING, WELFARE DEPT	2												
	-	9	20	15	10	LIGHTS - EXIT	1												
	-	11		15	12	LIGHTS - LOBBY, STAIR	9												
	-	13		15	14	LIGHTS - BATHS, SHOWER, COMPTON	4												
	-	15		15	16	LIGHTS - RECEPTION LOBBY, WAITING	2												
	-	17		19															
1	A/C COMPARTMENT	19	20	20															
1	A/C MEETING RM	21	20	22															
1	A/C LOBBY	23	20	24															
	-	25		26															
	-	27		28															
	-	29	20	30															
1	A/C OFFICE	31	20	32															
1	A/C WELFARE	33	20	34															
1	A/C LUNCH RM	35	20	36															
1	A/C SECURITY	37	20	38															
1	A/C IT RM	39	20	40															
1	A/C MEETING RM	40		42															



PANEL SCHEDULE

PROJECT : ST. JOHN POLYCLINIC

CABLE	POLES	O'lets	DESCRIPTION	CCT No	C.B. RATING	LOAD R	LOAD Y	LOAD B	C.B. RATING	CCT No	DESCRIPTION	Cable	POLES	IN
10AWG	1	1	O'LETS: LABORATORY	1	20				15	2	LTS. PODIATRY CENTER LAB & TOILET	3	1	20
10AWG	1	3	O'LETS: DOCTORS & TREATMENT	3	20				15	4,4	LTS. BEKUALI AND POLY DOCTOR	1	1	20
10AWG	1	1	O'LETS: TREATMENT (DIRTY)	5	20				15	6	LTS. DOCTORS	1	1	20
10AWG	1	1	HAND DRYER	7	20				15	8	LTS. EMER. TREATMENT	1	1	20
10AWG	1	1	HAND DRYER	9	20				15	10	LTS. EMER. TREATMENT	1	1	20
10AWG	1	1	HAND DRYER	11	20				15	12	LTS. VACCINE ROOM DIRTY	1	1	20
10AWG	1	1	HAND DRYER	13	20				15	14	LTS. STAFF MEDICINE OFFICE	1	1	20
10AWG	1	1	HAND DRYER	15	20				15	16	LTS. STAFF MEDICINE OFFICE	1	1	20
10AWG	1	1	HAND DRYER	17	20				15	18	LTS. AMBULANCE	1	1	20
			SPACE	19					15	20	LTS. CORRIDOR	1	1	20
			SPACE	21					15	22	AUTOMATIC DR	1	1	20
			SPACE	23					15	24	EXTRACT FAN	1	1	20
			SPACE	25					15	26	EXTRACT FAN	1	1	20
			SPACE	27					15	28	SPACE	1	1	20
			SPACE	29					15	30	SPACE	1	1	20
			SPACE	31					15	32	SPACE	1	1	20
			SPACE	33	60				15	34	SPACE	1	1	20
			DUCT HEATER DH - 3M	35					100	40	SPACE	1	1	20
10AWG	3	1	AHU 1 (M)	37					100	40	SPACE	1	1	20
10AWG	3	1		39	20				100	40	SPACE	1	1	20
				41					100	40	SPACE	1	1	20

SUPPLY 3 PHASE 4 WIRE 400/230 VOLTS
 100 AMP/3 POLES BUS 200 AMP/3
 MAIN BKR 4C #14WG THWN WITH EARTH IN 2" PVC
 MAIN CABLE

FLUSH MTG
 SURFACE MTG
 LUGS ONLY

MAIN BREAKERS
 PAIR SALES & SERVICE (S) 2011
 Alhujum 22, 2011
 Located on Main Road of the building
 Panel MDP

PANEL SCHEDULE

PROJECT : ST. JOHN POLYCLINIC PANEL - ML1

CABLE	MM	POLES	O/Ws	DESCRIPTION	CCT			LOAD			C.B.			CCT	DESCRIPTION	O/Ws	POLES	CABLE
					No	RATING	R	Y	B	RATING	No	R	Y					
10AWG	1	1	1	OLETS. LABORATORY	1	20							19	2	OLETS. TREATMENT (DENT & WAITING)	3	1	12AWG
10AWG	1	2	1	OLETS. LABORATORY	3	20							19	4	OLETS. STAFF NURSE CONSULTING	4	1	12AWG
10AWG	1	2	1	OLETS. M & F TOILETS	5	20							19	4	OLETS. TOILETS	2	1	12AWG
10AWG	1	5	1	OLETS. LINEN, CORR & WAITING	17	20	7						19	4	OLETS. OUTSIDE TOILETS	2	1	12AWG
10AWG	1	6	1	OLETS. CATHERER & PODIATRY	8	20							19	10	OLETS. STAFF NURSE AC. NURSE	3	1	12AWG
10AWG	1	6	1	OLETS. SEXUAL HEALTH & DOCTOR	11	20							19	10	OLETS. TOILET - DRUG STORE	1	1	12AWG
10AWG	1	6	1	OLETS. DOCTORS	13	20							19	10	SPACE			
10AWG	1	6	1	OLETS. TREATMENT & WAITING	15	20							19	10	SPACE			
10AWG	1	4	1	OLETS. EMERGENCY TREATMENT	17	20	7						19	10	SPACE			
10AWG	1	4	1	OLETS. ASTHMA BAY	19	20							19	10	SPACE			
				SPACE	21								19	10	SPACE			
				SPACE	23								19	10	SPACE			
				SPACE	25								19	10	SPACE			
				SPACE	27								19	10	SPACE			
				SPACE	29								19	10	SPACE			
				SPACE	31								19	10	SPACE			
				SPACE	33								19	10	SPACE			
				SPACE	35								19	10	SPACE			
				SPACE	37								19	10	SPACE			
				SPACE	39								19	10	SPACE			
				SPACE	41								19	10	SPACE			
SUPPLY 3 PHASE 4 WIRE 208Y/120 VOLTS					FLUSH MTG					TMR SALES & SERVICE LTD. FONTABELLE, ST. MICHAEL								
MAIN BKR 30 AMPS 3 POLES BUS 200 AMPS					SURFACE MTG					August 22, 2011								
MAIN CABLE 5# 6AWG THWN IN 2" PVC CONDUIT					LUGS ONLY					Located in electrical room on main floor								

PANEL SCHEDULE

PROJECT : ST. JOHN POLYCLINIC PANEL - MLC 1

CABLE	MM	POLES	O/Ws	DESCRIPTION	CCT			LOAD			C.B.			CCT	DESCRIPTION	O/Ws	POLES	CABLE
					No	RATING	R	Y	B	RATING	No	R	Y					
10AWG	1	2	1	OLETS. STAFF NURSE INT & SNR SISTER	1	20							20	2	OLETS. SEXUAL HEALTH & DOCTORS	3	1	10AWG
				SPACE	3	20							20	4	OLETS. TREATMENT	4	1	10AWG
				SPACE	5								20	6	OLETS. EMERGENCY TREATMENT	3	1	10AWG
				SPACE	7								20	8	SPACE			
				SPACE	9								10		SPACE			
				SPACE	11								12		SPACE			
				SPACE	13								14		SPACE			
6AWG	3	1	1	MAIN BREAKER	15	30							16		SPACE			
				SPACE	17								18		SPACE			
SUPPLY 3 PHASE 4 WIRE 208Y/120 VOLTS					FLUSH MTG					TMR SALES & SERVICE LTD. FONTABELLE, ST. MICHAEL								
MAIN BKR 30 AMPS 3 POLES BUS 100 AMPS					SURFACE MTG					August 22, 2011								
MAIN CABLE 5# 6AWG THWN IN 2" PVC CONDUIT					LUGS ONLY					Located in electrical room on main floor								

PROJECT : ST. JOHN POLYCLINIC

PANEL SCHEDULE

PANEL - MLC

CABLE	MM	POLES	Olets	DESCRIPTION	OCT	C.B.	LOAD	C.B.	OCT	DESCRIPTION	Olets	POLES	CABLE
					NO.	RATING	A	V	B	RATING	NO.		
10AWG	1	3		OLETS: PERSONNEL	1	20			20	20			10AWG
10AWG	1	2		OLETS: PERSONNEL	3	20			20	40			10AWG
10AWG	1	2		OLETS: VISITING DOCTOR & COUNSEL	5	20			20	60			10AWG
				SPACE	7	20			20	8			10AWG
				SPACE	9					10			
				SPACE	11					12			
				SPACE	13					14			
				SPACE	15					16			
				SPACE	17				30	18			
				SPACE	19					20			
SUPPLY: 3, PHASE 4 WIRE 200Y/120 VOLTS					FLUSH MTG					* TMR SALES & SERVICE LTD. FONTABELLE, ST. MICHAEL			
MAIN BKR 30 AMPS, 3 POLES BUS 100 AMP'S					SURFACE MTG					August 22, 2011			
MAIN CABLE #8 8AWG THWN CABLE IN 2" PVC CONDUIT					LUSS ONLY					Located in switchgear room and fed from panel ML2			



PANEL SCHEDULE

PROJECT : ST. JOHN POLYCLINIC PANEL - M

CABLE	UM	POLES	C/Wts	DESCRIPTION	LOAD			C.B.			CCT	DESCRIPTION	C/Wts	POLES	CABLE
					No	RATING	P	Y	B	RATING					
12AWG	1	1		OLETS: LOUNGE & LUNCH RM	3	20	B			15	3		1	12AWG	
12AWG	1	1		OLETS: THERAPY	3	20	B			15	4		1	12AWG	
12AWG	1	1		OLETS: THERAPY	5	20	B			15	5		1	12AWG	
12AWG	1	2		OLETS: PRINT RM	7	20	B			15	6		1	12AWG	
12AWG	1	1		OLETS: COOLER THERAPY	9	20	B			15	10		1	12AWG	
12AWG	1	1		HAND DRYER	11	20	B			15	12		1	12AWG	
12AWG	1	1		HAND DRYER	13	20	B			15	14		1	12AWG	
12AWG	1	1		HAND DRYER	15	20	B			15	15		1	12AWG	
12AWG	1	1		HAND DRYER	17	20	B			15	18		1	12AWG	
12AWG	1	1		HAND DRYER	19	20	B			15	20		1	12AWG	
12AWG	1	1		HAND DRYER	21	20	B			15	21		1	12AWG	
12AWG	1	1		HAND DRYER	23	20	B			15	24		1	12AWG	
12AWG	1	1		HAND DRYER	25	20	B			15	25		1	12AWG	
12AWG	3	1		DUCT HEATER DH - 3M	27	40	B			15	26		1	12AWG	
12AWG	3	1		DUCT HEATER DH - 3M	29	40	B			15	30		1	12AWG	
12AWG	3	1		DUCT HEATER DH - 3M	31	40	B			15	32		1	12AWG	
12AWG	1	1		ACCU PS (M)	33	20	B			15	34		1	12AWG	
12AWG	2	1		FCU (M)	35	20	B			15	36		1	12AWG	
12AWG	2	1		FCU (M)	37	20	B			15	38		1	12AWG	
12AWG	3	1		AHU (M)	39	20	B		100	40		3	12AWG		
12AWG	3	1		AHU (M)	41	20	B			42		3	12AWG		
MAIN BKR 100 AMP 3 POLES BUS 200 AMP					FLUSH MTO					TMR SALES & SERVICE LTD. FONTABELLE, ST. MICHAEL					
MAIN CABLE 40 #12AWG THWN WITH EARTH IN 3" PVC					LUGS ONLY					August 23, 2011 Located on main floor in electrical closet and fed 1000 panel MDP					



PANEL SCHEDULE

PROJECT : ST. JOHN POLYCLINIC

PANEL - M

CABLE	POLES	O'lets	DESCRIPTION	CCT No.	C.B. RATING	LOAD P	C.B. RATING	CCT No.	DESCRIPTION	O'lets	POLES	CABLE
10AWG	1	1	O'LETS: LOUNGE & LUNCH RM	1	20	2	15	2	LTS: LOUNGE & LUNCH RM	9	1	12AWG
10AWG	1	1	O'LETS: THERAPY	3	20	2	15	4	LTS: SICK BAY & TOILETS	10	1	12AWG
10AWG	1	1	O'LETS: THERAPY	5	20	2	15	6	LTS: OFF, FACILITY MAIN & CORR.	7	1	12AWG
10AWG	1	2	O'LETS: PRINT RM	7	20	2	15	8	LTS: CONF RM. DOWN LTS	8	1	12AWG
10AWG	1	1	O'LETS: COOLER THERAPY	9	20	2	15	10	LTS: COUNSEL, MENTAL HEALTH & THER	5	1	12AWG
10AWG	1	1	HAND DRYER	11	20	2	15	12	LTS: REHAB THER & ASSESSMENT	6	1	12AWG
10AWG	1	1	HAND DRYER	13	20	2	15	14	LTS: M.A.F. TOILETS & WAITING	10	1	12AWG
10AWG	1	1	HAND DRYER	15	20	2	15	16	LTS: VISITING DOC: COUNSEL & STORE	7	1	12AWG
10AWG	1	1	HAND DRYER	17	20	2	15	18	LTS: PERSONNEL, STORE & PRINT RM.	8	1	12AWG
10AWG	1	1	HAND DRYER	19	20	2	15	20	LTS: EXIT SIGNS	5	1	12AWG
10AWG	1	1	HAND DRYER	21	20	2	15	22	ELECTRONIC DOORS	1	1	12AWG
10AWG	1	1	HAND DRYER	23	20	2	15	24	ELECTRONIC DOORS	1	1	12AWG
10AWG	1	1	HAND DRYER	25	20	2	15	25	LTS: STAIRS	12	1	12AWG
10AWG	1	1	HAND DRYER	27	20	2	15	26	LTS: EXTERNAL	10	1	12AWG
10AWG	3	1	DUCT HEATER CH. 3M	29	40	2	15	30	EXTRACT FANS	2	1	12AWG
10AWG	1	1	ACCU-PS (M)	33	20	2	15	34	ISOLATION SPACE			
10AWG	2	1	FCU CON (M)	35	20	2	15	36	ISOLATION SPACE			
10AWG	3	1	A-U (3M)	39	20	2	100	40	SPACE			
10AWG	3	1		41	20	2	100	42	MAIN BREAKER	3	1	1AWG

SUPPLY 3 PHASE 4 WIRE 400/230 VOLTS
 100 AMPS 3 POLES BUS 200 AMPS
 MAIN BKR 4C #14W/3 THWN WITH EARTH IN 2" PVC
 MAIN CABLE

FLUSH MTG
 SURFACE MTG
 LUGS ONLY

TMR SALES & SERVICE LTD. FONTABELLE, ST. MICHAEL
 August 22, 2011
 Located on main floor in electrical closet and fed from panel MDP

Appendix VII - St. Philip Polyclinic Electrical Panel Photograph

St. Philip Polyclinic

Panel Description: SUB PANEL A
 Description: SUB PANEL A
 Location: 200 S. 10th St. St. Philip Polyclinic

LINE NO.	DESCRIPTION	AMPS	LOCATION
1	A/C 30 AMP ISOLATOR		
2	A/C 30 AMP ISOLATOR		
3	A/C 30 AMP ISOLATOR		
4	A/C 30 AMP ISOLATOR		
5	A/C 30 AMP ISOLATOR		
6	A/C 30 AMP ISOLATOR		
7	A/C 30 AMP ISOLATOR		
8	A/C 30 AMP ISOLATOR		
9	A/C 30 AMP ISOLATOR		
10	A/C 30 AMP ISOLATOR		
11	A/C 30 AMP ISOLATOR		
12	A/C 30 AMP ISOLATOR		
13	A/C 30 AMP ISOLATOR		
14	A/C 30 AMP ISOLATOR		
15	A/C 30 AMP ISOLATOR		
16	A/C 30 AMP ISOLATOR		
17	A/C 30 AMP ISOLATOR		
18	A/C 30 AMP ISOLATOR		
19	A/C 30 AMP ISOLATOR		
20	A/C 30 AMP ISOLATOR		
21	A/C 30 AMP ISOLATOR		
22	A/C 30 AMP ISOLATOR		
23	A/C 30 AMP ISOLATOR		
24	A/C 30 AMP ISOLATOR		
25	A/C 30 AMP ISOLATOR		
26	A/C 30 AMP ISOLATOR		
27	A/C 30 AMP ISOLATOR		
28	A/C 30 AMP ISOLATOR		
29	A/C 30 AMP ISOLATOR		
30	A/C 30 AMP ISOLATOR		
31	A/C 30 AMP ISOLATOR		
32	A/C 30 AMP ISOLATOR		
33	A/C 30 AMP ISOLATOR		
34	A/C 30 AMP ISOLATOR		
35	A/C 30 AMP ISOLATOR		
36	A/C 30 AMP ISOLATOR		
37	A/C 30 AMP ISOLATOR		
38	A/C 30 AMP ISOLATOR		
39	A/C 30 AMP ISOLATOR		
40	A/C 30 AMP ISOLATOR		
41	A/C 30 AMP ISOLATOR		

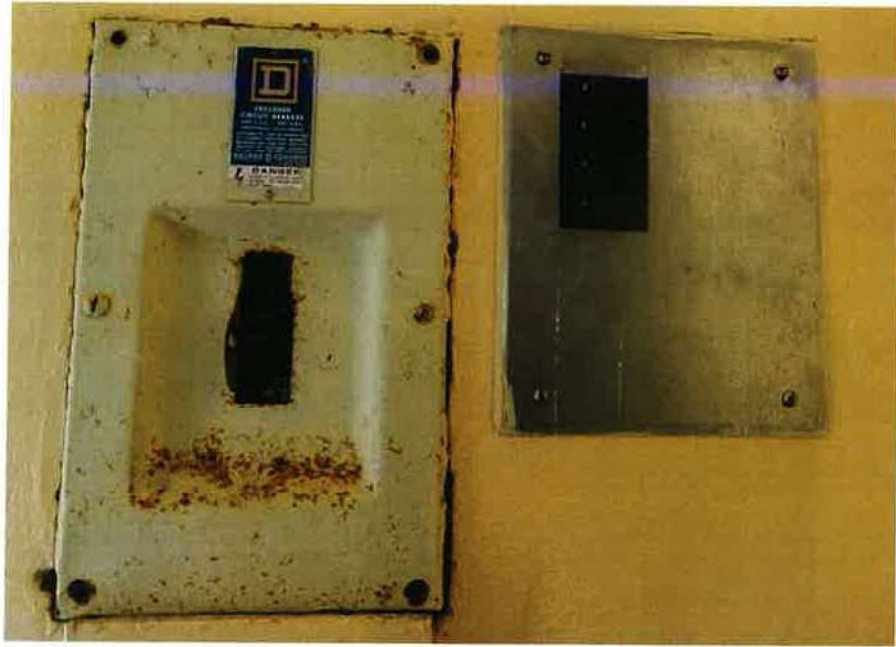


St. Philip Polyclinic

Panel Description: SUB PANEL A
 Description: SUB PANEL A
 Location: 200 S. 10th St. St. Philip Polyclinic

LINE NO.	DESCRIPTION	AMPS	LOCATION
1	A/C 30 AMP ISOLATOR		
2	A/C 30 AMP ISOLATOR		
3	A/C 30 AMP ISOLATOR		
4	A/C 30 AMP ISOLATOR		
5	A/C 30 AMP ISOLATOR		
6	A/C 30 AMP ISOLATOR		
7	A/C 30 AMP ISOLATOR		
8	A/C 30 AMP ISOLATOR		
9	A/C 30 AMP ISOLATOR		
10	A/C 30 AMP ISOLATOR		
11	A/C 30 AMP ISOLATOR		
12	A/C 30 AMP ISOLATOR		
13	A/C 30 AMP ISOLATOR		
14	A/C 30 AMP ISOLATOR		
15	A/C 30 AMP ISOLATOR		
16	A/C 30 AMP ISOLATOR		
17	A/C 30 AMP ISOLATOR		
18	A/C 30 AMP ISOLATOR		
19	A/C 30 AMP ISOLATOR		
20	A/C 30 AMP ISOLATOR		
21	A/C 30 AMP ISOLATOR		
22	A/C 30 AMP ISOLATOR		
23	A/C 30 AMP ISOLATOR		
24	A/C 30 AMP ISOLATOR		
25	A/C 30 AMP ISOLATOR		
26	A/C 30 AMP ISOLATOR		
27	A/C 30 AMP ISOLATOR		
28	A/C 30 AMP ISOLATOR		
29	A/C 30 AMP ISOLATOR		
30	A/C 30 AMP ISOLATOR		
31	A/C 30 AMP ISOLATOR		
32	A/C 30 AMP ISOLATOR		
33	A/C 30 AMP ISOLATOR		
34	A/C 30 AMP ISOLATOR		
35	A/C 30 AMP ISOLATOR		
36	A/C 30 AMP ISOLATOR		
37	A/C 30 AMP ISOLATOR		
38	A/C 30 AMP ISOLATOR		
39	A/C 30 AMP ISOLATOR		
40	A/C 30 AMP ISOLATOR		
41	A/C 30 AMP ISOLATOR		





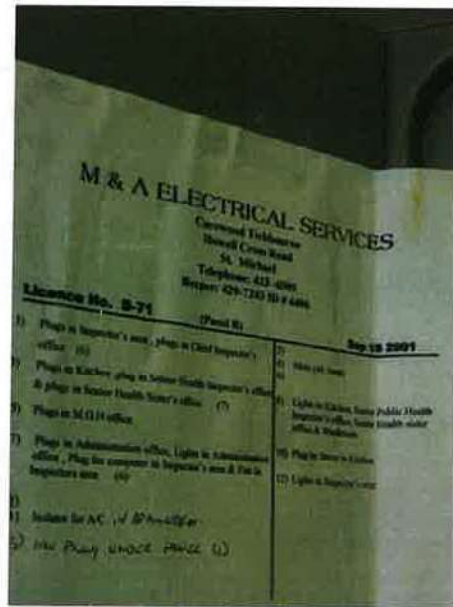
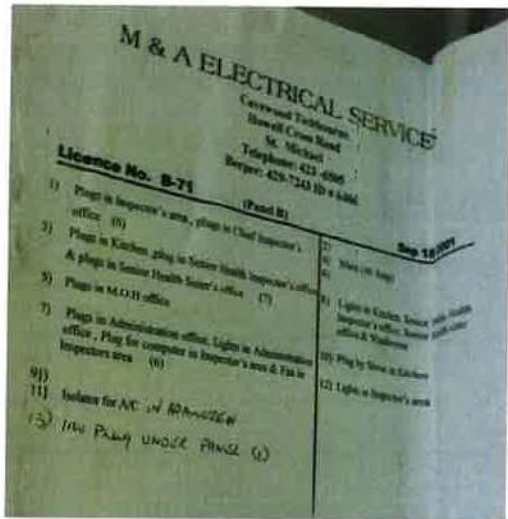
Summers Electrical Co. Ltd.

LINE NO.	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
1	WIRE IN COMMON (4)			
2	LIGHT (1)			
3	PLUG IN DOCTOR'S OFFICE			
4	CONCRETE BATHROOM (1)			
5	WATER HEATER (1)			
6	LIGHT IN LABORATORY (1)			
7	PLANNING / IMMUNIZATION (1)			
8	PLUG DENTAL CLINIC WAITING ROOM (1)			
9	PLUG DENTAL CLINIC ROOM (1)			
10	PLUG WAITING ROOM CLINIC (1)			
11	PLUG WAITING ROOM CLINIC (1)			
12	PLUG WAITING ROOM CLINIC (1)			
13	PLUG WAITING ROOM CLINIC (1)			
14	PLUG WAITING ROOM CLINIC (1)			
15	PLUG WAITING ROOM CLINIC (1)			
16	PLUG WAITING ROOM CLINIC (1)			
17	PLUG WAITING ROOM CLINIC (1)			
18	PLUG WAITING ROOM CLINIC (1)			
19	PLUG WAITING ROOM CLINIC (1)			
20	PLUG WAITING ROOM CLINIC (1)			
21	PLUG WAITING ROOM CLINIC (1)			
22	PLUG WAITING ROOM CLINIC (1)			
23	PLUG WAITING ROOM CLINIC (1)			
24	PLUG WAITING ROOM CLINIC (1)			
25	PLUG WAITING ROOM CLINIC (1)			
26	PLUG WAITING ROOM CLINIC (1)			
27	PLUG WAITING ROOM CLINIC (1)			
28	PLUG WAITING ROOM CLINIC (1)			
29	PLUG WAITING ROOM CLINIC (1)			
30	PLUG WAITING ROOM CLINIC (1)			
31	PLUG WAITING ROOM CLINIC (1)			
32	PLUG WAITING ROOM CLINIC (1)			
33	PLUG WAITING ROOM CLINIC (1)			
34	PLUG WAITING ROOM CLINIC (1)			
35	PLUG WAITING ROOM CLINIC (1)			
36	PLUG WAITING ROOM CLINIC (1)			
37	PLUG WAITING ROOM CLINIC (1)			
38	PLUG WAITING ROOM CLINIC (1)			
39	PLUG WAITING ROOM CLINIC (1)			
40	PLUG WAITING ROOM CLINIC (1)			
41	PLUG WAITING ROOM CLINIC (1)			

1	Outlet
2	Computer plug - one (1) in computer room and two (2) open office floor outlets
3	Computer plug - one (1) in pharmacy room and three (3) in open office floor outlets
4	Computer plug in open office floor outlet
5	Computer plug - one (1) in open office and three (3) in Special Assignment Office west wall
6	Outlet - one (1) in Pharmacy room and four (4) in open office floor outlets
7	Outlet - one (1) in Pharmacy Room and four (4) in open office floor outlets
8	Outlet - one (1) in Open Office and four (4) in Special Assignment Office
9	Plug - five (5) in Open Office east wall
10	Outlet - three (3) in Open Office east wall
11	Outlet - one (1) in Office Clerk Room
12	Computer plug - two (2) in Open Office west wall
13	Outlet - one (1) in Office Clerk Room east wall
14	Computer plug - one (1) in Office Clerk Room east wall
15	Outlet - two (2) in Open Office west wall
16	Computer plug - two (2) in Open Office floor plugs
17	Computer plug - three (3) in Open Office east wall
18	Computer plug - two (2) in Open Office east wall
19	Computer plug - three (3) in Open Office east wall
20	Spare
21	Spare
22	Spare
23	Light - four (4) in Open Office ceiling
24***	Light - three (3) in Open Office ceiling
25	Light - two (2) in PH10 area, one (1) in PH10, one (1) in restrooms, and one (1) in storage area
26***	Light - three outside
27	Light - one (1) in main entrance, four (4) Office Clerk ceiling, two (2) in Bathroom 1
28	Light - four (4) in Open Office ceiling
29****	Light - four (4) in Open Office ceiling
30	Light - two (2) in Computer Room ceiling, two (2) in Pharmacy Room ceiling, two (2) in Special Assignments Office, one (1) in passage to kitchen, two (2) in passage to office
31	Light - five (5) outside lights
32 & 33	Light - two (2) in kitchen ceiling, two (2) under kitchen cupboard, two (2) in passage way, one (1) in toilet opposite kitchen and one (1) in toilet near to emergency exit

Breaker No.	Outlets
1	Breaker - spare
2-3	Outlet - A/C isolator
4-5	Outlet - A/C isolator
6-7	Outlet - A/C isolator
8-9	Outlet - A/C isolator
10-11	Outlet - A/C isolator
12-13	Outlet - A/C isolator
14-15	Outlet - A/C isolator
16-17	Outlet - A/C isolator
18-19	Outlet - A/C isolator
20	Plugs - one computer plug in SEHO office and one (1) computer plug in PEHO office
21	Plugs - one in kitchen for fridge
22 ***	Outlets - three (3) in SEHO and one (1) in Clerk's Office
23	Outlets - one (1) in kitchen above counter
24	Outlets - one in Open Office centre wall, one (1) in Passageway to SEHO Office and one (1) in passageway to Toilet
25	Outlets - two (2) in Clerk's Office and three (3) in PEHO Office
26-27	Outlets - one (1) in Toilet room and one (1) in kitchen

Appendix VIII – Eunice Gibson Polyclinic Electrical Panel Photographs





M & A ELECTRICAL SERVICES
 Caywood Tichbourne
 Howell Cross Road
 St. Michael
 Telephone: 423-6595
 Beeper: 429-7243 ID # 6486

Licence No. B-71 (Part B) Page 02 Items

11	MAIN (70 Amp)	21	Sub Main (Upstairs) 150 Amp
12	Lights in Dentist's Exam Room (1)	22	Plugs in Waiting room, light in Dentist's office, plugs in Dentist's office & Exam room (12)
13	Lights in Dentist's office (over door) (1)	23	Plugs in Dentist's office & plug for Exam room
14	Lights in Waiting area (1)	24	Plugs in Treatment area in front of Panel along in exam Treatment area, plugs in treatment area in Therapy room
15	Lights in Main Treatment area (over Exam Table, light in Exam room, light in Dentist's office) (1)	25	Plugs in Dentist's, plug Dentist's office behind Panel
16	Lights in Dentist's exam, light in Exam room, light in Examination room, light in Dentist's office (1)	26	Plugs in Dentist's office (Exam 1-4), Plug in Dentist's office #1, plug in Waiting area - exam Treatment room
17	plugs (1)	27	27) Dr. Wood
18	AC Unit in Room 02 (1) 5A	28	28) Dr. Wood's office A/C Unit (Room 1)
19	A/C Unit in Room 01 (1)	29	29) Hinds A/C
		30	30) Police
		31	31



M & A ELECTRICAL SERVICES
 Caywood Tichbourne
 Howell Cross Road
 St. Michael
 Telephone: 423-6595
 Beeper: 429-7243 ID # 6486

Licence No. B-71 (Part C) 2001/09/14

11	MAIN (70 Amp)	21	Sub Main (Upstairs) Panel A (40 Amp)
12	Lights in Bathrooms, Main exam & Panel exam (1)	22	Plugs & Lights in exam Appointment area water room, Dentist's room, Reception room Appointment area & Reception area (15)
13	Lights in corridor by Bathrooms & Lights outside over door ways (12)	23	Plugs outside Treatment room & Emergency room (2)
14	Emergency	24	121 Surface plug over counter in dentistry room (1)
15	Lights in Records room, plug in Reception & Lights under main exam & exam over (8)	25	141 Plugs in Conference room (1)
16	220v plug over counter in Dentistry room (1)	26	161 220v Plug in Treatment room (1)
17	Lights in Dressing room (1)		
18			

187
20) A/C Unit Conference Room



Appendix IX - Winston Scott Polyclinic Electrical Panel Photographs



C. D. WILLIAMS ELECTRICAL LTD
 WARREN'S ST MICHAEL, BARBADOS

CIRCUIT NO.	DESIGNATION	REMARKS	SIZE		WIRE
			NO.	WAYS	
MAINS		PHASE	AMPS	POLE	
DESCRIPTION					
1	TO WINE STORE	BRIDGE OVER DOOR			
2	TO WINE STORE	BRIDGE OVER DOOR			
3	TO WINE STORE	BRIDGE OVER DOOR			
4	TO WINE STORE	BRIDGE OVER DOOR			
5	TO WINE STORE	BRIDGE OVER DOOR			
6	TO WINE STORE	BRIDGE OVER DOOR			
7	TO WINE STORE	BRIDGE OVER DOOR			
8	TO WINE STORE	BRIDGE OVER DOOR			
9	TO WINE STORE	BRIDGE OVER DOOR			
10	TO WINE STORE	BRIDGE OVER DOOR			
11	TO WINE STORE	BRIDGE OVER DOOR			
12	TO WINE STORE	BRIDGE OVER DOOR			
13	TO WINE STORE	BRIDGE OVER DOOR			
14	TO WINE STORE	BRIDGE OVER DOOR			
15	TO WINE STORE	BRIDGE OVER DOOR			
16	TO WINE STORE	BRIDGE OVER DOOR			
17	TO WINE STORE	BRIDGE OVER DOOR			
18	TO WINE STORE	BRIDGE OVER DOOR			
19	TO WINE STORE	BRIDGE OVER DOOR			
20	TO WINE STORE	BRIDGE OVER DOOR			
21	TO WINE STORE	BRIDGE OVER DOOR			
22	TO WINE STORE	BRIDGE OVER DOOR			
23	TO WINE STORE	BRIDGE OVER DOOR			
24	TO WINE STORE	BRIDGE OVER DOOR			
25	TO WINE STORE	BRIDGE OVER DOOR			
26	TO WINE STORE	BRIDGE OVER DOOR			
27	TO WINE STORE	BRIDGE OVER DOOR			
28	TO WINE STORE	BRIDGE OVER DOOR			
29	TO WINE STORE	BRIDGE OVER DOOR			



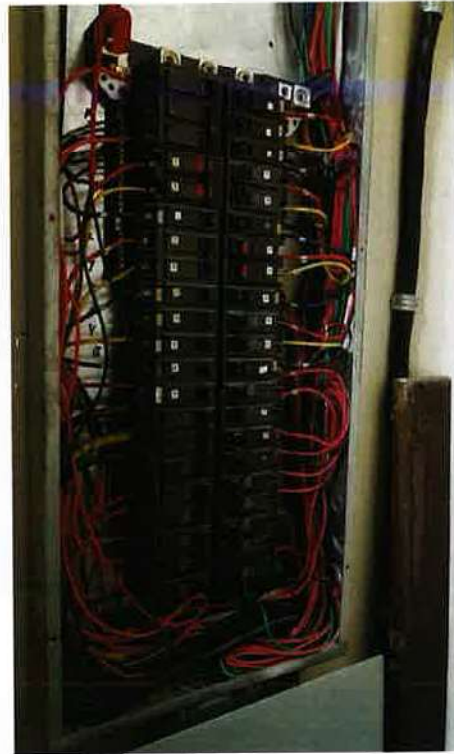
Breaker Panel Designation: Vaccine Chill Room Location: Vaccine Room

Type: 24 way, SP&N 230 Volts

CPD Type: 50 Ampere MCB

CCT No	CPD Size	Location	Cable Size AWG	Circuit Type
2	50	Main	8	
4				
5	15	Controller	14	Control
6	15	Battery Charger Generator	14	Control
7	15	Evaporator #1	14	Motor
9				
8	15	Door Light and Heater	14	Light
10				
11	15	Evaporator #1	14	Motor
13				
12	15	Chiller Condenser	12	Motor
14				
15	15	Alarm	14	Control
16	15	Chiller Condenser	12	Motor
18				

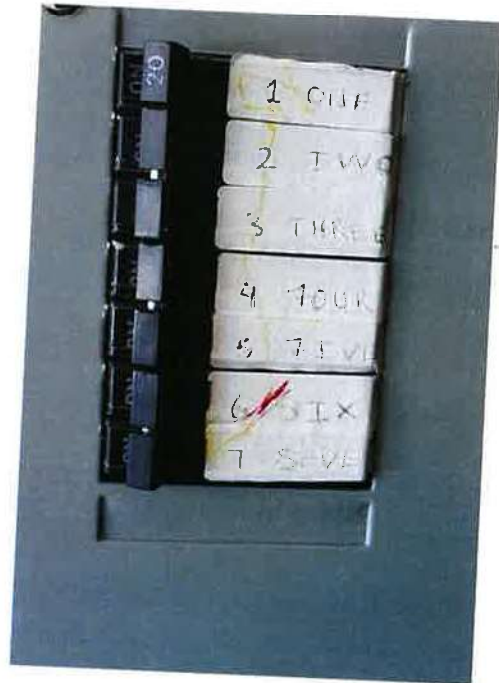




G. D. WILLIAMS ELECTRICAL LTD
WARREN'S, ST MICHAEL'S, BIRMINGHAM

PANEL DESIGNATION: _____
SIZE: 30 WAYS 21 7/8"
MAINS: 230 VOLTS 3 PHASE 4 WIRE

NO.	DESCRIPTION	NO.	DESCRIPTION
1	17 OUTLETS - HAEMATOLOGY	2	17 OUTLETS - SERVICE TECHNOLOGY
3	A/C UNIT - EXTERIC & PARASITOLGY	4	A/C UNIT - BACTERIOLOGY
5	A/C UNIT - EXTERIC & PARASITOLGY	6	A/C UNIT - BACTERIOLOGY
7	110V 5/OUTLETS - BACTERIOLOGY	8	110V 5/OUTLETS - HAEMATOLOGY & PHYSIOLOGY
9	220V 5/OUTLET - BACTERIOLOGY	10	220V 5/OUTLETS - HAEMATOLOGY & PHYSIOLOGY
11	220V 5/OUTLET - BACTERIOLOGY	12	220V 5/OUTLETS - HAEMATOLOGY & PHYSIOLOGY
13	220V 5/OUTLET - EXTERIC & PARASITOLGY	14	220V 5/OUTLETS - BACTERIOLOGY
15	A/C UNIT - BACTERIOLOGY	16	A/C UNIT - BACTERIOLOGY
17	A/C UNIT - BACTERIOLOGY	18	A/C UNIT - BACTERIOLOGY
19	LGTS. - CHIEF & SENIOR TECHNOLOGIST	20	LGTS. - MICROBIOLOGY, PHARMACY, BACTERIOLOGY, ETC.
21		22	
23		24	
25	MAIN BREAKER	26	1075 - 400V 5/OUTLETS 400
27		28	
29		30	



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PANEL DESIGNATION: _____ PANEL NO: _____

NO.	DESCRIPTION	NO.	DESCRIPTION
1	SPARE	17	220V SOCKET OUTLET
3	SPARE	18	220V SOCKET OUTLET
5	SPARE	19	220V SOCKET OUTLET
7	SPARE	20	220V SOCKET OUTLET
9	SPARE	21	220V SOCKET OUTLET
11	SPARE	22	220V SOCKET OUTLET
13	A/C UNIT MICRO BIOLOGY	23	220V SOCKET OUTLET
15	A/C UNIT MICRO BIOLOGY	24	220V SOCKET OUTLET
17	A/C UNIT ROUTINE BACTERIOLOGY	25	220V SOCKET OUTLET
19	A/C UNIT - SANITARY BACTERIOLOGY	26	220V SOCKET OUTLET
21	A/C UNIT - SANITARY BACTERIOLOGY	27	220V SOCKET OUTLET
23	220 V SOCKET OUTLET	28	220V SOCKET OUTLET
25	220 V SOCKET OUTLET	29	220V SOCKET OUTLET
27	220 V SOCKET OUTLET	30	220V SOCKET OUTLET
29	220 V SOCKET OUTLET	31	220V SOCKET OUTLET
31	220 V SOCKET OUTLET	32	220V SOCKET OUTLET
33	220 V SOCKET OUTLET	33	220V SOCKET OUTLET
35	220 V SOCKET OUTLET	34	220V SOCKET OUTLET
37	220 V SOCKET OUTLET	35	220V SOCKET OUTLET
39	220 V SOCKET OUTLET	36	220V SOCKET OUTLET
41	220 V SOCKET OUTLET	37	220V SOCKET OUTLET





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PANEL DESIGNATION: PANEL F1

CABLE NO.	DESCRIPTION	EXTENSION	DESCRIPTION
1	OUTLETS IN PUBLIC HEALTH INSPECTOR	6	
3	LIGHTS IN PUBLIC HEALTH INSPECTOR	7	2 LIGHT IN STORE ROOM
5	LIGHT IN PASSAGE AND STAIRS	8	LIGHT IN PASSAGE OFFICE, HALL & STAIRS
7	OUTLET IN SENIOR PUBLIC HEALTH INSPECTOR	9	2 LIGHTS FOR FANS
9		10	LIGHT IN OFFICE
11			
13			
15			
17			
19	MAIN BREAKER		
21	MAIN BREAKER		
23	MAIN BREAKER		

POINT NUMBER: UP

CABLE: 100 FT

MIN. AIR: 100 FT

MAX. AIR: 100 FT

MAIN CABLE: 100 FT

MAX. WIRE: 100 FT

LOCATION: 100 FT

