6.0 EQUIPMENT DESCRIPTIONS

6.1 Precoat Filters (UFF)

All pre-coat filters used on this project are manufactured by Atlas Australia. Atlas filter shells are fabricated from heavy gauge 316 Stainless Steel in accordance with specific Standards and References. The filters have in addition been coated with a Glass Flake Vinyl Ester coating for additional protection from the salt water environment. The Atlas brand that has been used on the project has NSPI (National Spa & Pool Institute, USA) approval as well as other design awards. The filters are a proven product in commercial pools and will provide excellent durability for the operator.

The filter elements inside an Atlas filter are injection moulded from ABS and are covered with a special filter fabric that is 100% monofilament polyethylene/polyester. The filter fabric is heat set during fabrication to provide perfect support for the replaceable filter media. The filter elements are held in place by o'rings at the head of the element. The filter elements are spaced to minimise bridging during the filter cycle. This unique element spacing also enhances the efficiency of the backwash cycle.

With regard to the filter's connections, soiled water enters the side of the filter that creates a strong swirling motion. This ensures that the filter elements are uniformly coated with the replaceable filter media that is added at the start of each filter cycle.

By operating the valves installed on the filter, water enters at the bottom of the filter with a upward type flow. As water is forced inside the filter elements, the supporting filter cloth balloons outwards causing the filter media to be discharged through the backwash line. This is called the upper backwash cycle. The valve arrangement is normally in the filter position. Another valve arrangement allows for a lower backwash (or rinse) cycle to be carried out.

The lower backwash cycle (or rinse) is carried out after a normal backwash cycle. This enables any remaining solid material to be evacuated from the filter chamber. Once this has been carried out, the filter can be placed back into filter mode and the filter pre-coated with DE powder.

Note that precoat filters have no need for any coagulants or floccing agents, and in fact, the use of any such material will result in extremely short filter cycles, blocked filter elements, and major service problems.

6.2 Electrical Control Systems

6.2.1 Introduction.

- Operators should never open any control panel unless a qualified service technician is present.
- Any adjustment of any instrumentation must be noted on the plantroom log sheets.

6.2.2 Electrical Control Boards. (ECB)

The facia panel on the ECB allows for the operation of all electrical equipment. A run meter is supplied for each main recirculating pump so that proper service procedures can be followed. Starters are provided for the various boost pumps and ancillary equipment.

The important function of the ECB is to integrate the actions of the pumps with the heating and the chemical dosing systems. If a lack of flow is detected, a series of electrical interlocks will automatically shut down specific/related plant. Each recirculation pump has a flow switch installed that detects water flow and provides a running signal to the main electrical control board. If there is no flow the pump will shut down after 20 seconds. They in turn are interlocked to the chemical control systems.

6.2.3 Remote Panel

The electrical control board has volt free contactors available so that if required in the future, a remote control panel could be fitted.

6.3 Chemical Control System

6.3.1 Introduction

Water treatment at the Centre provides primary disinfection and oxidation with salt water electrolytic chlorinators (which produce Hypochlorous Acid). Sodium Bi-Sulphate is used for pH correction in both pools.

6.3.2 Hypochlorous Acid

The pools utilize salt chlorinators that produce Hypochlorous Acid as the primary sanitizing agent. This equipment is installed within the plantroom on the mezzaniene level.

All chlorine systems are operated with Free Chlorine controllers and electronically controlled systems as generally outlined within **Section 4.1**. The installed systems will automatically increase or decrease the amount of chemical injected into the water according to the bathing load. The levels are preset and should not be adjusted without a supervisor’s knowledge and any such change is to be registered in the log book.

In addition to the salt chlorinators, a dry chlorine feed system has been installed as a “back up” in case the primary chlorination system fails, requires service etc. Information on these units are provided in the manufacturers manuals.

6.3.3 Dry Acid (Sodium Bi-Sulphate)

The Centre has dedicated bulk storage area for acid. This area is located in the plantroom. A diluted acid solution is injected into the system via a controlled dosing pump. Attention to all material safety data sheets and Workcover procedures are to be kept in mind when filling the storage tank.