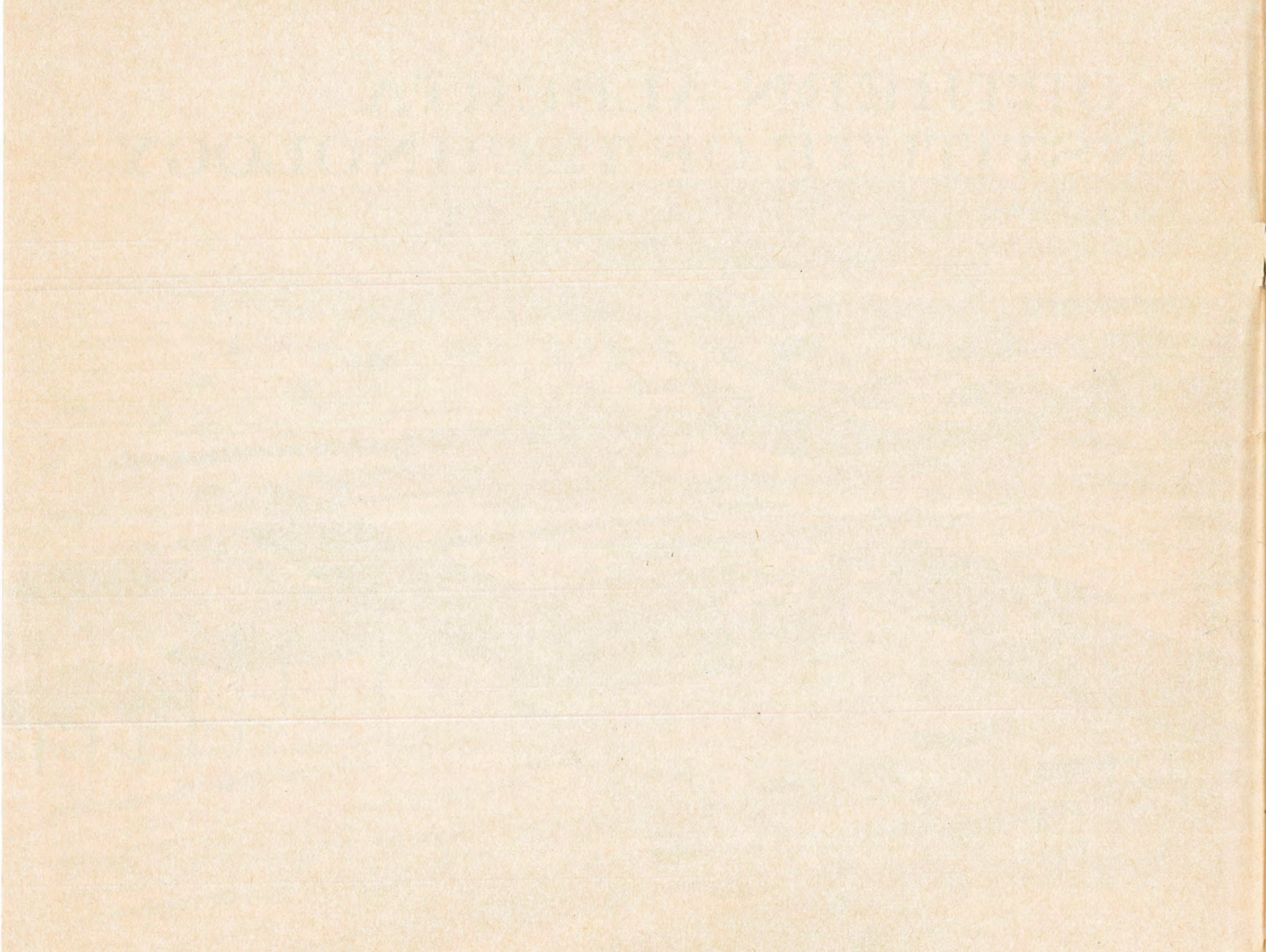


# NORTHERN ALBERTA INSTITUTE OF TECHNOLOGY

EDMONTON, ALBERTA, CANADA





## PROGRAMME

Official Opening, N. A. I. T. - 2:30 p. m., May 27, 1963.

### O'CANADA

### INVOCATION

- Chairman's Remarks - Hon. A. O. Aalborg
- Greetings - From the City of Edmonton,  
Mayor E. E. Roper
- Greetings - From the University of Alberta  
Dr. W. Johns
- Remarks - From the Federal Department of Labour  
The Honourable A. J. MacEachen
- Presentation of Key from Contractor to Hon. F. C. Colborne
- Unveiling of the G. Fred McNally Library Plaque by Dr. G. Haythorne
- Official Opening - Hon. E. C. Manning, Premier of Alberta

### THE QUEEN

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Refreshments and Tour of Buildings

P.P.C.L.I. BAND is appearing by kind permission of:

Brigadier G. C. Leech, O.B.E., C.D.,

Commander, Alberta Area,

Headquarters, Western Command,

EDMONTON, Alberta.

and is under the direction of:

Captain H.A. Jeffrey,

Director of Music,

P.P.C.L.I. Band,

EDMONTON, Alberta.

18 Wing R.C.A.F. H.Q. (Aux) Band,

under direction of

F/O E. Dalwood

## COURSES OFFERED AT THE INSTITUTE

### TECHNOLOGY DIVISION

The following are two-year Courses:

Architectural Technology	Industrial Electrical Technology
Civil Technology	Industrial Laboratory Technology
Dental Technician	Instrumentation Technology
Dental Mechanic	Materials Technology
Dental Assistant	Medical Laboratory Technology
Drafting Technology	Photographic Technology
Electronic Technology	Production Technology
Gas Technology	Refrigeration and Air Conditioning Technology
Heavy Duty Equipment Technology	X-Ray Technology

### BUSINESS EDUCATION AND VOCATIONAL DIVISION

Banking - 1 year	Data Processing - 1 year
Business Administration - 2 years	Ladies Dressmaking and Tailoring - 150 hours
Commercial Cooking - 2 years	Office Machine Repair - 1 year.

### APPRENTICESHIP DIVISION

Appliance Servicing	Motor Vehicle Repair
Auto Body Repair	Painting and Decorating
Baking	Plastering
Bricklaying	Plumbing
Carpentry	Radio Technician
Electrical (Construction)	Sheet Metal

Electrical (Communication)  
Electrical (Power)  
Gasfitting  
Heavy Duty Repair

Steamfitting  
Tile-setters  
Welding

Anyone interested in obtaining the 1963-64 Calendar, giving complete information on all Courses, may obtain same from the Information Booth located in the Central Hallway.

BUSINESS EDUCATION AND VOCATIONAL DIVISION

Banking - 1 year  
Business Administration - 2 years  
Commercial Cooking - 2 years  
Data Processing - 1 year  
Ladies Dressmaking and Tailoring - 150 hours  
Office Machine Repair - 1 year

APPRENTICESHIP DIVISION

Appliance Servicing  
Auto Body Repair  
Baking  
Bricklaying  
Carpentry  
Electrical (Construction)  
Motor Vehicle Repair  
Painting and Decorating  
Plastering  
Plumbing  
Radio Technician  
Sheet Metal

## TOUR GUIDE TO THE NORTHERN ALBERTA INSTITUTE OF TECHNOLOGY

By looking at the attached map of the Institute and following this Tour Guide, a comprehensive tour of all the points of particular interest may be easily undertaken. Should it be desired to view any specific Section, this too may be easily accomplished by finding the same Heading in this Guide as appears on the map in the area of your choice.

The point of commencement is taken as the Main Entrance by the "General Office" and before starting on the tour proper, the time should be taken to study the Mural which may be seen on the interior of the quadrangle nearest to you.

The Mural, so called, is actually correctly described as a "Rustic Mosaic Picture" and is the first of its kind in Canada. Designed by a European artist, it was entirely constructed in Toronto by Canadian Craftsmen. The initial stages prior to the actual construction took six months and the construction itself, the labours of seven men for a further six months. Brought to Edmonton glued to pieces of brown paper like a jigsaw puzzle, it was then reconstructed where you now see it. Made up of seven different types of marble and mosaic, it contains 600 pieces to the square foot and over 200 colors, the whole measuring 11 1/2 x 68 feet. The design is meant to convey to the onlooker the different phases of student instruction areas within the Institute and within the pattern may be seen such items as chemical glassware, a paint roller, a shovel, a crane, an automobile, mathematical formulae and electronics devices.

To begin the Tour commence by travelling anti-clockwise around the Institute, starting at the General Office. It will be seen that the first area is that of the:

## AUTOMOTIVE & HEAVY DIESEL SECTION

By entering via the passage marked on the map nearest the word "Automotive" it is possible then to walk through the entire shop layout and exit through the passage nearest the section "Heavy Duty Diesel" as marked on the map. Some of the items that may be seen in these shops include many types of vehicles permanently available for Student instruction; Fuel Injection and Electrical test Laboratories; the very latest in Auto overhaul shops, Dynamometer Room, Wheel Alignment pit, and a Machine Room. Also, various representative displays of Student crafts are to be seen.

After leaving this area, visit one or more classrooms, the Film Projection Room, the Blue Print Reading Room and the Shop Drawing (Drafting) Room. West of this central area which includes Staff offices is the Sheet Metal Section.

## SHEET METAL

In this area consisting of several shops and an individual theory and Layout Room, may be seen examples of equipment including the "Nibbler" and completed work done by students, demonstrating the level of achievement required before graduation.

In the same wing and opposite this area is the:

## WOODWORKING SECTION

This section consist of three shops, including a Spray Booth, and a carefully designed exhaust system. The shops are equipped to enable advanced types of carpentry and cabinet work to be undertaken.



The next wing of the Main Block is that containing the Machine shop and Plumbing Sections and the Institute Main Stores.

### THE MACHINE SHOP

This "Shop" is actually an Industrial Production Lab. with highly complex, ultra-modern machines capable of undertakings from the largest of sizes down to the manufacture of small screws. Here also may be seen a Heat Treatment Room. Detailed descriptions of equipment are provided at the machine shop for those interested in specific types of machines.

### THE PLUMBING SECTION

In this area the Plumbing Shop and also the gas and steam-fitting shops are located, the area being more accurately described as Piping Trades Shops. The equipment necessary to train students in the use of gas fired and lead burning equipment, in pipe fitting, and care, use, and assembly of pressure vessels.

The last of the "Shop" wings contains:

### THE ELECTRICAL LABORATORIES

Here are two basic, two advanced, two Power, a Communications, (Telephones), and a Refrigeration and Air Conditioning Laboratories. It should be noted here that the "Electrical" is different from the "Electronics" of which more is said later.

In separate buildings to the west of the main block (Industrial Building) are the Mortar Trades, Welding Shops and Services Buildings as follows:

## MORTAR TRADES

In this building may be seen examples of students work in Painting and Decorating, Plastering and Masonry, and also displays of interest in the Concrete and Soils Laboratories. A trip to this building will be well repaid for those persons interested in the aesthetic side of Building construction and decorating. Observe how each student has his own booth or work area.

## THE WELDING SHOPS

Here is a specialized area but one applicable to a peculiarly modern Science and one which we tend to take for granted in our everyday lives. A self contained unit with its own classrooms, it may yield some surprises to the uninitiated. On one side are "Gas" welding equipment and on the other "Arc" at the west end is the Pipe Welding Shop and Basic Machine Shop.

## THE SERVICES BUILDING

Contained herein are the Power House, Gas Technology and Public Works Shops. The Gas Tech Lab is concerned with the training of Technicians for the Natural Gas Industry. This field is of particular interest to Albertans as it relates to one of our vital economic interests.

Returning again to the main building, we arrive next at the:

## FOOD SERVICES SECTION

This area provides Food Service facilities for the Institute. A highly developed art requires a highly developed organization and so this, in addition to the vocational training of Dieticians, Food Service Managers, Chefs, waiters, utilizes this section.

The Servery. Centrally located between two dining rooms, it is designed along the "Scramble System" and allows four different meals to be served at the same time. In the middle is the self-service area for part or full course meals. On the North side the setup is such as to allow for "A la Carte" service. Here may be seen the newest and fastest gas broiler the "Infra-red Magic Ray" broiler. The south side is for fast frozen meals re-heated in a micro-wave oven. Full course meals may be obtained in three or less minutes by this use of rays instead of the conventional method of cooking.

Service Rooms. There are two of these and they contain an automatic dish-washing machine which prewashes, washes, rinses and sanitizes up to 20,000 pieces of china an hour, and a mechanical potwasher.

Range Work. Food for the Servery is produced mostly in this area. There are eight gas fired ranges and in the overhead hood is a combined exhaust and air conditioning unit. An ingenious fire prevention device is the automatic use of the hot water and steam supply to extinguish any fires as soon as they arise. Also, any fumes, smoke or steam which may escape the hoods upon rising into the ceiling is collected in a central area and exhausted. Another micro-wave cooker is located here.

SALAD PREPARATION. In this area are prepared the fruit, cold plates and sandwiches.

VEGETABLE PREPARATION. Here are two vegetables peelers each capable of handling 50 pounds of potatoes at one time, two pressure cookers and six steam kettles with a combined capacity of 250 gallons for the production of puddings, gravies, fillings, stews, etc.

THE BAKE SHOP. This is provided primarily to train Bakers and contains a revolving mechanical oven and a deck and hearth type oven, a doughnut fryer, dough retarder and dough proofers.

THE BEGINNERS LABORATORY AND CHEFS FINISHING LINE. The introduction to cooking will be obtained here where the student will practice until he or she is ready to enter the kitchen and produce items in quantity. At the north end is the Chefs Kitchen. This is to show quality and finish and is not meant to provide any great quantity. Meals from this area will be "A la Carte" only.

So far we have dealt with that part of the Institute concerned mainly with the training of Apprentices. For those who have covered the entire area so far mentioned, a rest is probably desirable and this may be obtained in the AUDITORIUM (capable of seating 300) opposite the Food Services Section. If you arrive between the hours of 7:30 p. m. and 9:00 p. m., you may listen to popular music played by the band of 18 Auxiliary Wing, R. C. A. F.

The remaining area of the Institute is in four parts consisting of the main Tech Block and the three Tech Wings, each with a basement and two upper floors thus:

#### THE MAIN TECHNICAL BLOCK - TOP FLOOR WEST END

A number of Business Education and Vocational Division classrooms are located in this area. Equipment is still being received. Although some rooms are only partially completed, they are open for inspection.

#### BARBER SHOP

The barber Shop training area has two rooms. The smaller of the two is equipped with four chairs and is used for initial training of students. The adjoining eleven chair shop is for intermediate and advanced instruction.

## BEAUTY CULTURE

A complete Beauty Culture Laboratory is located across the hall from the Barber Shop. These include reception area, Instructress's office, Dispensary and the student classroom areas. Student Operator counters are still to be installed and will occupy the central portion of the classrooms. Shampoo sinks are to be placed along the south wall. Dryer chairs, shampoo chairs and operator chairs are located in the general position, as they will be when the Beauty Culture Lab is in operation.

## BUSINESS EDUCATION CLASSROOMS

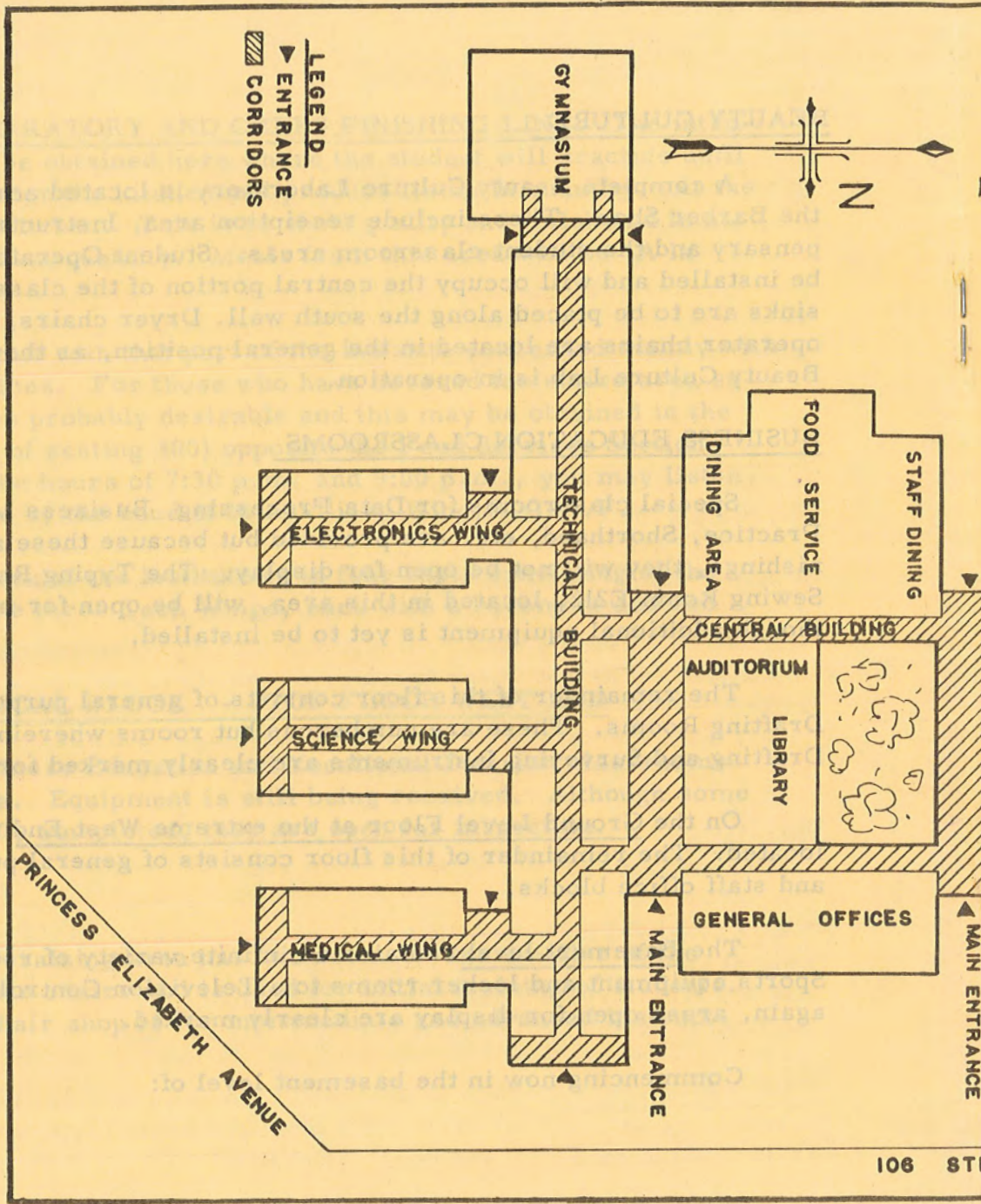
Special classrooms for Data Processing, Business Machines, Office Practice, Shorthand, etc. are provided but because these are awaiting furnishings, they will not be open for display. The Typing Room E225 and the Sewing Room E212, located in this area, will be open for inspection even though additional equipment is yet to be installed.

The remainder of this floor consists of general purpose classrooms and Drafting Rooms. These are numerous but rooms wherein are displayed Drafting and Surveying Instruments are clearly marked for easy identification.

On the Ground Level Floor at the extreme West End the Gymnasium is located. The remainder of this floor consists of general purpose classrooms and staff office blocks.

The Basement level contains an infinite variety of rooms ranging from Sports equipment and locker rooms to a Television Control Room. Once again, areas open for display are clearly marked.

Commencing now in the basement level of:



**LEGEND**  
 ▲ ENTRANCE  
 ▨ CORRIDORS



GYMNASIUM

ELECTRONICS WING

SCIENCE WING

MEDICAL WING

TECHNICAL BUILDING

DINING AREA

FOOD SERVICE

STAFF DINING

CENTRAL BUILDING

AUDITORIUM

LIBRARY

GENERAL OFFICES

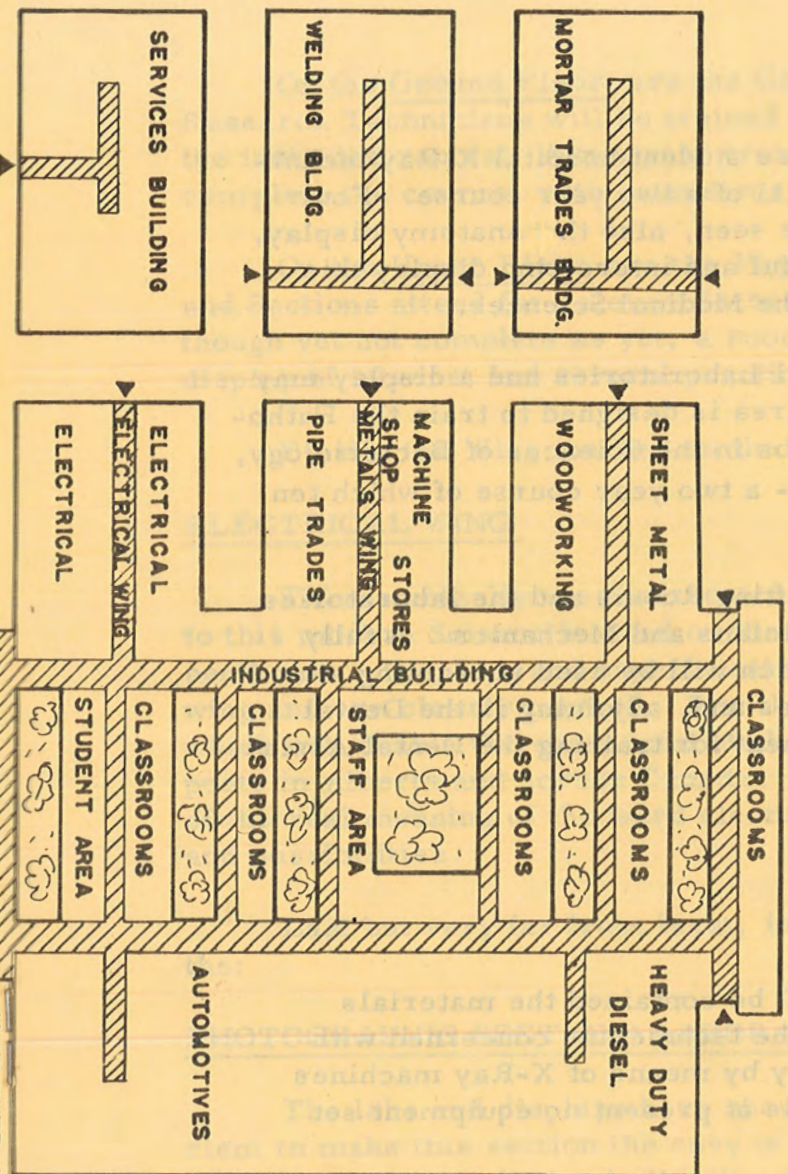
PRINCESS ELIZABETH AVENUE

MAIN ENTRANCE

MAIN ENTRANCE

118 AVENUE

# NORTHERN ALBERTA INSTITUTE OF TECHNOLOGY



## THE MEDICAL WING

Here is housed the X-Ray section where student hospital X-Ray technicians will be trained for five months of a total of a two year course. Four major machines and two mobile ones may be seen, also the Anatomy display, Nursing Station, and slide display. A colorful and interesting display this should not be missed by any interested in the Medical Sciences.

The Ground Floor contains the Medical Laboratories and a display may be seen in a clearly indicated room. This area is designed to train the Pathological Laboratory Techs of the Hospital Labs in the Sciences of Bacteriology, Histology, Bio-chemistry and Haematology - a two year course of which ten months in these labs.

The Upper Floor contains several Drafting Rooms and the laboratories for the training of Dental Assistants, Technicians and Mechanics. A fully equipped laboratory with displays is that which will be used in training students in the manufacture of artificial dentures and, adjoining is the Dental Chair Room with the most modern of equipment for training the Dental Assistants under actual operative conditions.

Moving across now to the:

## SCIENCE WING BASEMENT

In the basement is that area where will be contained the materials testing laboratories. Here will be trained the technicians concerned with testing materials for strengths and durability by means of X-Ray machines and much other complex apparatus. There is at present no equipment set up for viewing in this area.



On the Ground Floor are the Chemistry Labs where both Industrial and Research Technicians will be trained and an interesting display may be seen in the indicated rooms. A two year training period is necessary in these labs to complete the course, with extensions for the Research Techs.

On the Upper Floor are the Physics Labs where students of all levels and Sections attend for relevant lectures and experiments in Physics. Although yet not complete as yet, a room has been set up with a representative display of interest and several practical experiments are in progress.

Finally the Wing marked on the map is:

#### ELECTRICAL WING

This is actually the Electronics Wing and contains laboratories devoted to this modern Science located on the ground and upper floors, and in the penthouse. Displays and experiments may be seen in various Sections of this wing and are clearly marked. It will offer a wide variety of training programs which will enable the successful student to compete for the finest Electronics posts in Alberta and across Canada. The displays will give an excellent idea of the real meaning of the word electronics to those not really sure of its fields and possibilities.

Last but very far from least, in the Basement of this wing may be seen the:

#### PHOTOGRAPHIC SECTIONS LABORATORIES

The labs and displays here show a selection of modern equipment sufficient to make this section the envy of any amateur or professional in this field. Also situated here is the Audio-Visual Section with its displays of equipment, films, etc.

Whilst on this floor, take the opportunity to walk through the "Little Theatre" set with a scene from the "The Cocktail Party" by T. S. Eliot. It will make a pleasing finale to a tour of the Northern Alberta Institute of Technology.

#### ELECTRICAL WING

This is actually the Electrical Wing and contains laboratories devoted to this subject located on the ground and upper floors, and in that and the penthouse. Displays and experiments may be seen in the Section of the wing and are chiefly made. It will offer a wide variety of training programs which will enable the interested visitor to see the latest in electrical work in Alberta and across Canada. The displays will give an excellent idea of the real meaning of the word electric to those not really sure of its fields and possibilities.

Last but not very far from least, in the Basement of this wing is the

PHOTOGRAPHIC SECTIONS LABORATORIES and the staff of electrical engineers and technicians will be happy to answer any questions you may have. The displays and experiments show a selection of modern equipment which is used to make this section the envy of any amateur or professional in the field. Also situated here is the Audio-Visual Section with its displays of equipment, films, etc.

## THE ELECTRICAL CONTRACT - PHASE ONE

The design for the Electrical work for Phase One of the Northern Alberta Institute of Technology was carried out by Allsopp, Simpson & Morgan Ltd., Consulting Electrical Engineers, Edmonton, Alberta. The Contract was awarded to Hume & Rumble Ltd. of Edmonton.

Power to Phase One is supplied at 13.8 KV with main transformation of 1250 KVA to an Utilization voltage of 347/600 volts. Sub-transformation at 3 points steps the voltage down to 120/208 volts.

The majority of the lighting is fluorescent fixtures operating at 347 volts. With the large areas involved, the use of this higher voltage rather than the more conventional 120 volts greatly decreased the branch circuit wiring costs. Switching is effected by use of low voltage relay switches rated for 347 volts.

600 volts, three phase power is distributed to supply heavy motor loads including mechanical, heating, and ventilating motors. 600 volts is also supplied to a bus duct in the Machine Shop where there is a heavy concentration of large motors.

Smaller shop loads, receptacles, student benches, etc. are supplied at 120/208 volts.

An extensive metallic underfloor duct system is provided in shop areas providing facilities for power supply to shop equipment, and specialized shop wiring for direct current circuits, telecommunication circuits, etc.

In Electrical Shops, where there are constantly changing electrical requirements, shop panels are fed from a bus duct run above the corridor

ceiling so that an increased load in any particular shop may be readily accommodated.

A complete supervised fire alarm system is provided throughout the building with graphic annunciator to indicate the area from which the fire call was originated. Provision is included for extension of the fire alarm system to other phases of the development. The fire alarm system includes provision for connection to the City of Edmonton, Municipal Fire Alarm System.

The clock system is of the synchronous wired type providing automatic supervision and correction each hour of all clocks throughout the building.

The varied functions of the building require careful design considerations and close co-ordination with the Shop Director of the Institute.

### THE MECHANICAL CONTRACT - PHASE ONE

The Phase One of the Mechanical Contract for the Northern Alberta Institute of Technology was awarded in December, 1961 to Canadian Comstock Co. Ltd. The design of Mechanical Installation was carried out by the firm of Hilliker & Bishop Ltd., Consulting Mechanical Engineers, Edmonton, Alberta.

Phase One of the Northern Alberta Institute of Technology has approximately 200,000 square feet of floor area to accommodate instructional training for Sheet Metal, Pipe Fitting, Wood Working, Electrical, Electronics, Automotive Diesel and Mortar Trades.

It is interesting to note that Phase One has equipment installed to supply approximately 385,000 C.F.M. to the various shops and classrooms. In addition, a similar amount of air is exhausted through general exhaust, carbon monoxide system, cyclones and special exhaust system throughout the entire building.

A special spray paint booth area was developed between the Diesel Shop and the Automotive Shop. In this area two spray paint booths were designed to accommodate huge and small vehicles. A point of interest in this area is the overhead oven which was the first suspended, travelling oven in Canada.

Another area of interest in the Wood Working Shop which is divided into three large areas. It was necessary to develop a cyclone system for the removal of shavings and sawdust to accommodate either one of the three areas individually or as a group. Through a system of special bypass valves and special controls, this was accomplished and still maintains one control cyclone system rather than having one for each area.

In the Diesel and Automotive Shops large overhead and underground monoxide systems were designed to remove carbon monoxide for equipment being used during test periods. In these areas special attention was required for the supply of fresh air during periods when the monoxide systems were in use.

The total steam load for heating and ventilating for Phase One was approximately 35,000 lbs. per hour during winter design conditions. The greater part of this load being required for areas having 100 % fresh air loads.

## MECHANICAL SYSTEMS

Description of mechanical systems for the Northern Alberta Institute of Technology, Phases Two and Three.

### SERVICES

All steam used for heating, process and service equipment is obtained from the central boiler plant located in the central area of the site.

All water for domestic uses, fire lines and sprinkler system is likewise obtained from a central point in the boiler room and is distributed by piping in the service tunnel connecting all portions of the building. These tunnels are of sufficient size to permit servicemen to walk through the areas and to carry materials and tools for any necessary maintenance or modification.

### HEATING SYSTEM

The heating system utilizes steam from the main power plant to heat hot water in convectors. The hot water is then pumped in various zones to radiation, convectors and unit heaters throughout the building. Each heating system zone is controlled by outdoor thermostat which varies the hot water supply temperature in a ratio with the outside temperature. This ratio can be increased or decreased manually on the main control panel.

The heating pumps circulate 2,030 gallons per minute of water for the various circuits in Phase Two and Phase Three.

## AIR CONDITIONING SYSTEM

All portions of the building in Phase Two and Phase Three are fully air conditioned. The air conditioning system utilizes "double duct, high velocity" air distribution systems for transmitting the conditioned air to the various rooms of the building as required to heat or cool the building.

A high velocity system was utilized in order to conserve space for ducts and to economize on materials since with this type of system air is transmitted through the ducts at from 2500 to 4000 feet per minute instead of the standard speed of 1000 feet per minute in normal low velocity duct-work installations.

These various systems consist of a fan section in the equipment room where the air is filtered, humidified, and heated or cooled as required. The air is then blown by the fan through main distribution ducts at a higher than normal velocity where it passes through specially designed boxes which decrease the air velocity and also attenuate the air noise down to acceptable limits.

The main distribution ducts run in parallel over the corridor ceilings and one duct contains warm air while the other duct contains cold air. The warm air and cold air are also mixed in the special boxes previously described, and the amount of cold air and warm air being mixed is controlled by the room thermostat, thus, if the room temperature rises above the thermostat setting more cold air is admitted thus cooling the room down. Conversely, more warm air is delivered to the room if the room temperature is too cold.

There are a total of seven fan systems located in six different equipment rooms which deliver a total air quantity to the various areas of over 365 thousand cubic feet of air per minute. Included in this amount are the

following air quantities:

Gymnasium	32,000 cfm
Administration and Library	61,110 cfm
Food Service Area	44,000 cfm

The total connected horsepower of the fans to move this air is 335 H. P. A typical fan installation is located in the Main Technical Building, basement floor, Room E14. These air quantities provide a sufficient volume of air so that the air is changed in the building a minimum of eight times per hour, with some specific areas having an air change rate of fourteen times per hour, or every four and one-half minutes.

In addition to these "high velocity air conditioning systems" there are also various standard low velocity ventilation and air conditioning systems in specific areas, such as the gymnasium, and the small rooms located on the roof of the Electronics and Medical Wings.

Many exhaust systems are installed throughout the various buildings to exhaust air from locations such as through various kitchen hoods, laboratory fume hoods, and photography drying ovens. The make-up air for these systems is supplied by the "high velocity air conditioning systems" which provide a minimum of 100,000 cubic feet of fresh air per minute which not only provides air to make-up for that being exhausted but also allows for some positive pressure in the building with respect to outdoors in an effort to eliminate infiltration of outside air into the building. (Note exhaust ducts over ranges and grills in Food Service Kitchen and Servery).

The cooling requirements for the whole complex of buildings are over 1300 tons of refrigeration which is equivalent to the cooling which would be



received from the melting of 1300 tons of ice per day. This is made up of three absorption machines, two units of 600 tons each and one unit of 125 tons to provide cooling to refrigeration areas in Phase One.

Refrigeration is obtained by cooling water in absorption type refrigeration units, and the chilled water thus obtained is circulated through water cooling coils in the various fan sections previously described in order to cool the air which is distributed through the cold air ducts of the various "double duct high velocity systems". A total of 4170 gallons per minute of cooled water are circulated in this system.

These refrigeration units utilize 26,000 pounds of steam per hour to achieve the required cooling capacity, thereby utilizing boiler plant capacity which would otherwise be idle in the summer months, and also taking advantage of the favorable gas rates available for this application in the Edmonton area.

Heat from the absorption machines, which are located in the basement area, is taken out of the building by means of a circulating water system to cooling towers on the roof, which by means of a spray system radiate the heat to the atmosphere. Cooling towers are located on the roof of the Science Wing and the tower cools 4756 gallons of water per minute approximately 20 degrees F., which removes 42.4 million btu's of heat from the absorption machine.

## CONTROLS

All controls for the heating and air conditioning systems are completely automatic for temperature and humidity to maintain optimum conditions.

All temperature, pressure, and motor pilot lights, etc., are represented graphically for the various systems on a master control panel which indicates

the operation of all equipment throughout the building. Temperatures are recorded on continuous roll chart recorders that give a running account of temperatures at various points of the heating and air conditioning system. Master Control Panel located in Room E4, Basement of Main Technical Building.

### PLUMBING AND DRAINAGE

The drainage system is a combined sewer type system where sanitary and storm sewage is common on the exterior of the building. Inside the building the sanitary and storm systems are separated. In addition, the sanitary drainage system is divided into two systems, the regular sanitary system from washrooms, etc., and an acid drainage system from laboratory sinks, etc.

The plumbing system consists of a sprinkler system in the basement areas, fire hose cabinets throughout the building, natural gas system to laboratory areas, process compressed air system, process vacuum system to laboratory areas, and five central vacuum cleaning systems for Phase Two and Phase Three buildings.

NOTE, Aluminum discs approximately 10" diameter located in floor in various areas. These are vacuum cleaner connection units. Hose attachments may be used by removing circular insert, brooms may be cleaned by removing slotted inserts.

Domestic hot water is supplied to the Phase Two building from the central power plant. The Phase Three area has a steam fed hot water tank heater.

