PROVINCE OF BRITISH COLUMBIA

Minister of Public Works

REPORT

FOR THE FISCAL YEAR

1964/65

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1966

To Major-General the Honourable GEORGE RANDOLPH PEARKES,
V.C., P.C., C.B., D.S.O., M.C.,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

Herewith I beg respectfully to submit the Annual Report of the Department of Public Works for the fiscal year ended March 31, 1965, in compliance with the provisions of the *Public Works Act.*

W. N. CHANT,
Minister of Public Works.

Office of the Minister of Public Works,
Parliament Buildings, December 31, 1965.

" We require from buildings, as from men, two kinds of goodness; first, the doing their practical duty well; then that they be graceful and pleasing in doing it; which last is itself another form of duty."—*John Ruskin.*

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As in previous years, this Report contains examples of work by artists and architects of the Department of Public Works.

" We will lead, not follow."

REPORT OF THE DEPUTY MINISTER

The Honourable W. N. Chant,
Minister of Public Works,
Parliament Buildings, Victoria, B.C.

Sir,—I have the honour to submit for your consideration the Annual Report of the Department for the fiscal year ended March 31, 1965.

Elsewhere in this Report will be found those of the heads of divisions. These set out work accomplished and planned, tenders let and accepted, and Departmental accounts.

Sharp increases in the cost-of-construction index have given concern. Efforts to keep within earlier estimates put before you can be directed only at the size or quality of buildings. Both have limitations. Size is governed by requirements and, even with most careful study, a point is reached where both economics and good planning dictate size.

Quality is even more difficult. A decision can only be reached by considering each building on its merits. What would be adequate in one instance would be inadequate in another. Factors such as use, locality, and weather conditions must be borne in mind. We are reluctant, also, to retreat too far from the design features which have been so well received.

On the positive side, however, this problem of rising costs has afforded Department architects and engineers a challenge to exercise their full ingenuity. The result is that the Government is obtaining very good value for moneys expended.

With the opening of the Ganges Courthouse, the first all-electric Government building went into use. Experience to date, while short, indicates a very satisfactory result. During the year further studies in depth were made by our engineers in co-operation with British Columbia Hydro and Power Authority engineers as to the application of the all-electric principle to large buildings. The conclusions reached so far are most promising, and further studies are being made.

As reported elsewhere, satisfactory progress has been made on co-ordinating the work of the Safety Divisions. Standardization of office procedures has been effected and the issuance of permits simplified. Further measures to provide more convenient service are being planned.

The year has been a very busy one, and I would like to again record my thanks to the staff for their loyal and cheerful service.

A. E. WEBB,
Deputy Minister.

Victoria, B.C., December 30, 1965.

REPORT OF THE CHIEF ARCHITECT

" Observe degree, priority and place."—*Shakespeare.*

It is noteworthy that the past few years have seen an emergence of quality architecture produced by the Department of Public Works. " Quality " implies a judgment of values. However, it is possible to produce a prestige building with quality materials, but vapid so far as design is concerned, and unworkmanlike in execution.

These possibilities are now being lessened, and there are evidences that the trend toward total quality is progressing well. In large measure the vigilance of our project inspectors is responsible for better workmanship in the field.

A plea must be made for adequate time for the design architect's creativity, both in matters æsthetic and constructional. To inhibit this is to court the risk of producing what might be termed " parvenu architecture," analogous to the acquisition of expensive vestments worn in execrable taste.

Work undertaken by the Department of Public Works is set forth as follows:—

Category 1: Contracts let during the fiscal year 1964/65.

Category 2: Projects researched and planned during the same period.

CATEGORY 1

Thirty-two principal capital contracts were let. Thirty-eight per cent were classified under general projects, 34 per cent for the Department of Education, and 28 per cent for the Department of Health Services and Hospital Insurance.

Particulars of these contracts will be found in the back of the Public Works Report, but three projects of considerable interest are mentioned here.

1. *Bull River—Kootenay Fish Hatchery.*—The purpose of this project is to accommodate the various facilities required for the artificial propagation of game fish, and for research work in fish culture. This operation will be conducted by the Fish and Game Branch of the Department of Recreation and Conservation.

The gross area of the buildings including the staff residences will exceed 27,000 square feet.

When complete this project should be a classic example of the combination of business and pleasure—the business for which the hatchery was designed, and the tourist attraction of great interest to sportsmen and the general public alike.

No effort has been spared in the design to make the hatchery with its outdoor reflecting pools and its interior displays extremely attractive to visitors.

2. *Quesnel—New Provincial Government Building.*—This new building, designed to house nine Government departments, will undoubtedly be one of the finest contributions to contemporary architecture in the Cariboo District.

There are two wings—the four-story and basement office wing and the single-story and basement Courtroom wing. These wings are joined by a 50-foot single-story link containing the entrance foyer and the Government Agent's office.

One of the most striking features of the building is the use of highly decorative cast aluminum screens at the north and south ends of the Courtroom wing. The use of large precast concrete panels in the office block provides a rich texture to the face of the building.

It will be a structure of which the citizens of Quesnel may well be proud.

3. *Ganges—New Provincial Government Building.*—This small and attractive building provides considerably expanded facilities for the administration of the district.

It accommodates three major departments, and the windows of the Magistrate's Court look out on to a small, pleasant enclosed garden.

The new building is unique among Government buildings in that it is the first to be heated entirely by electricity, providing clean heat with individual control in every major room.

CATEGORY 2

Approximately 35 projects were in the planning stage in the fiscal year under review, and of these, 13 went out to tender during this period.

The fiscal year 1964/65 saw a resurgence of vocational-school planning, similar in many ways to the original development of a few years earlier.

Four locations in various areas of the Province were scheduled for new vocational-school projects. These were Victoria, Kamloops, Terrace, and Dawson Creek.

Additional buildings and facilities were planned for the existing vocational schools at Burnaby, Nanaimo, Kelowna, Prince George, and Nelson. The new facilities are briefly outlined hereunder.

1. *Victoria.*—The acquisition of a highly suitable site is being negotiated and planning is in the formative stage. It is believed that the facilities to be provided will be most suitable to the needs of this region.

2. *Kamloops.*—A site of approximately 1,500 acres, formerly used as a Royal Canadian Navy ammunition depot has been acquired from Crown Assets Disposal Corporation. No programme of the required disciplines has yet been received, and therefore planning of the site to date has been confined to the area to be occupied by facilities for the Attorney-General's Department.

3. *Terrace.*—The complex being planned comprises an administration building, classrooms for business training, coastal navigation, and other courses. Workshops for heavy-duty mechanics, welding and millwright work, marine diesel and gas engineers, carpentry and millwork, and industrial electrical and instrumentation are being planned. The complex will also be provided with dormitories and a cafeteria.

4. *Dawson Creek.*—The R.C.A.F. sector control centre site was acquired from Crown Assets Disposal Corporation, and is approximately 60 acres in extent. Eighteen existing and serviceable buildings will be converted for vocational-school purposes. These will comprise dormitories for both sexes, a cafeteria, a gymnasium, administration offices, classrooms, and workshops. In addition, two new buildings were planned for automotive work and agricultural services.

It is anticipated that contracts will be under way for this work in the latter part of 1965.

New Buildings and Alterations and Additions to Existing Vocational Schools

1. *Burnaby Vocational School and British Columbia Institute of Technology:*—

(*a*) New teacher-training building.
(*b*) New gymnasium-auditorium.
(*c*) New library-bookstore.
(*d*) New trowel trades workshop.
(*e*) New electronics building.
(*f*) Alterations to the existing Institute of Technology to provide new classrooms, laboratories, and a lecture theatre. The boiler-house, of necessity,

is being increased to take the additional demand of these and other contiguous facilities.

(*g*) Additions to enlarge the capacity of the jointly shared cafeteria.

2. *Nanaimo.*—To supplement existing facilities, three major additions were planned, as follows:—

(*a*) A general-purpose workshop.

(*b*) Dormitory for women.

(*c*) An additional floor to the existing classroom block.

3. *Kelowna.*—Four major additions were planned, as follows:—

(*a*) A cafeteria.

(*b*) A gymnasium-auditorium.

(*c*) Dormitories for both sexes.

(*d*) Addition to the existing boiler-house.

4. *Prince George.*—The new added facilities planned for this vocational school are as follows:—

(*a*) A general-purpose workshop.

(*b*) A sawmill shed.

(*c*) Alterations to the classroom block to augment existing facilities.

(*d*) Dormitories for both sexes.

(*e*) A cafeteria.

(*f*) Additions to the present boiler-house.

5. *Nelson.*—Somewhat similar additions to those planned for the Nanaimo Vocational School were designed for this school, as follows:—

(*a*) A general-purpose workshop.

(*b*) Dormitories for both sexes.

(*c*) A cafeteria.

(*d*) An extension to the existing boiler-house.

Department of Health Services and Hospital Insurance

1. *Tranquille.*—Planning was commenced for a new 104-bed hospital. At the same time, consideration was given to expanding the kitchen and dining facilities to meet new demands.

2. *Essondale.*—Detailed sketch plans of the proposed new medical clinic addition to North Lawn were sent to the user department for committee study.

3. *Essondale.*—Continuing the programme of total revision of procedures in garbage-handling, planning was started for remodelling facilities at Centre and West Lawn Buildings.

4. *Victoria, Lee Avenue.*—Research was commenced on a new mental health facility. The plans envisage a building 400 feet long (on the basement and first floors) by 100 feet, with six upper floors. Bed capacity will total 180. The numerous facilities will include recreational, occupational, and group therapy rooms, day rooms, a cafeteria, and a dining-room.

It is anticipated that a first-phase tender call will be made early in January, 1966.

5. *Victoria, Royal Oak.*—Due to protracted negotiations on sewage disposal at the site, little firm planning of the proposed 400-bed hospital for retarded children has been possible. However, preliminary sketches have been submitted to the user department for study.

6. *Burnaby.*—Planning was started on the residental care unit for children on the last day of the fiscal year under review, and, therefore, it is inappropriate to make further mention of the project in this Report.

Department of the Attorney-General

1. *Prince George—Addition to Men's Gaol.*—The work involved consisted in providing the gaol with additional facilities and accommodation for 30 extra prisoners in cells and 40 in dormitories. Approximately 33,000 extra square feet of space was planned.

Tenders were called in February, 1965, but due to irregularity in bidding these were cancelled. Following the receipt of new tenders on a modified plan, a contract was subsequently awarded.

2. *Saltair, Vancouver Island.*—Planning was started on a new Men's Gaol to accommodate 220 prisoners and 75 staff.

3. *Haney—Allco Institution.*—Continued planning took place on this project to provide a kitchen and stores building as the next stage of development.

4. *Vancouver—Addition to the Courthouse.*—A copy of an initial report submitted to the Attorney-General by the Chief Justice of the Supreme Court of British Columbia was received in December, 1964. This formed the tentative basis for preparing a schedule of accommodation, which was submitted to the Attorney-General's Department at the end of January, 1965.

This schedule was incomplete due to the lack of criteria and statistics relevant to the numerous ancillary facilities. This information is presently being obtained by the user department, and its receipt will enable areas to be determined and cost analyses to be prepared.

General

1. *Victoria—Archives and Museum.*—Intensive planning proceeded on this large and important project with a view to letting contracts for demolition and excavation, bulk steel, Haddington Island stone, and footings and foundations during the period May to August, 1965. It is gratifying to report that all these contracts were let during this period.

It is difficult to visualize the vast amount of detailed research requisite in designing a large modern museum, quite apart from purely æsthetic requirements. Nevertheless, planning proceeded well in co-operation with the Museum Steering Committee.

2. *Duncan—New Provincial Government Building.*—Concurrently with the letting of Phase No. 1 contract for the reinforced-concrete shell of the Courts Building, planning was continued on this building and the multi-story circular office structure.

3. *Vanderhoof.*—Planning was commenced of a new Highways Department establishment for the repair, maintenance, and storage of Highways equipment. The buildings will include a large maintenance workshop, a storage warehouse, and a four-bay vehicle-storage building.

4. *Deas Island.*—Plans were completed for the British Columbia Ferry Authority for a large steel-frame structure to house fuels, paints, and lubricating-oils.

5. *Chetwynd.*—Plans were started for a weigh-scale house required for new traffic proceeding in a north-south direction west of Dawson Creek.

6. *Burnaby.*—Following the letting of a Phase No. 1 contract for foundations, structural steelwork, and roofing, planning continued on the Public Works Building on the interior work necessary for total completion of the building.

7. *Cranbrook, Kelowna, and Fort St. John—Provincial Government Buildings.*—Planning was commenced on major additions to these three Government buildings, but pressures on other projects necessitated putting the planning temporarily in abeyance.

8. *Essondale, Colony Farm—Barn Alterations and New Silo.*—Extensive alterations were planned to bring physical requirements up to an acceptable level and to provide proper mechanical cleaning equipment.

GENERAL

During the fiscal year 1964/65, approximately 16 projects for senior citizens' housing were reviewed and reported on for the Provincial Secretary's Department.

Similar service was performed for Lands Service for buildings to be constructed on University Endowment Lands at the University of British Columbia.

On the last day of the fiscal year, a Provincial Government plan-viewing room was established by the Department of Public Works at 207 West Hastings Street, Vancouver, for all Government departments wishing to display plans and specifications prior to tendering.

This free service to general contractors and sub-contractors materially augments existing facilities for the industry when bidding on Government projects.

In conclusion, it is most satisfactory to report that in spite of the difficulties engendered by the wide physical separation of the various divisions of the Public Works Department, excellent co-operation and liaison were given by all members of the staff.

W. R. H. CURTIS, M.R.A.I.C., A.R.I.B.A., A.N.Z.I.A.,
Chief Architect.

REPORT OF THE SENIOR ELECTRICAL DESIGNER

During the past year we have continued to carry out many extensive electrical and lighting designs in co-operation with our Architectural Division on new Government Buildings, including such units as Kootenay Fish Hatchery; addition to Prince George Gaol; Government Building, Fort Nelson; Hillside Building, Essondale; 104-bed unit, Tranquille; Dawson Creek Vocational School; Public Works maintenance building, Burnaby; trowel and trades building, Vocational School, Burnaby; Government building, Duncan; and kitchen and dining facilities, Tranquille.

This year the first all-electric Government building was opened at Ganges, and we are pleased to report that it is proving to be highly satisfactory both functionally and economically. It is predicted that the future could see more of our new office buildings designed to operate as complete electrical units.

We continued to prepare electrical plans and specifications for many other Government departments, including Highways, Forestry, British Columbia Ferry Authority, Commercial Transport, and Education.

In the past year we have carried out the complete electrical designs for the new Swartz Bay ferry terminal and Otter Bay, Comox, and Westview terminals. We are at present working on the new Kelsey Bay and Prince Rupert installations, which are the latest ports of the continuing expansion of the B.C. Ferry system.

We have also continued to prepare electrical plans and specifications for the Construction and Maintenance Division covering the many projects carried out by it during the year. Technical advice and assistance were supplied as requested to all maintenance branches throughout the Province. The co-operation of the maintenance staffs during the year has been excellent.

As of September 1, 1965, all telephones and communications became the responsibility of this Division. This included all Public Works switchboard personnel.

Many advanced changes and design of telephone systems are now under way, which will greatly increase both in efficiency and capacity the service to the Province's major centres.

The new system now being installed in the Douglas Building in Victoria is known as the " Telpak " system and will supply foreign exchange lines from Vancouver, Kamloops, Kelowna, Prince George, Nelson, and Nanaimo, and all terminating on the new Parliament Buildings telephone exchange.

Operators on the Parliament Buildings switchboard will be trained to cover the operation of the " Telpak " system.

It is interesting to note that telephone communication traffic has increased over 25 per cent during the past year between the major centres mentioned. This condition is being brought on by the extensive growth of our Province, and continual checks are being made on the telephone systems of the Government in an effort to keep pace with the ever-increasing communications traffic.

Our thanks to all divisions—Architectural, Mechanical, Structural, Landscape, and Construction and Maintenance—who gave us their utmost co-operation in correlating the many projects carried out.

The attention given our electrical installations by the project inspectors is also greatly appreciated.

J. R. WALKER,
Senior Electrical Designer.

REPORT OF THE CIVIL AND STRUCTURAL ENGINEER

" There is more to life than increasing its speed."—*Mohatma Gandhi.*

During the past year the Civil and Structural Engineering Division has been engaged on the design of higher, more complex, and unconventional buildings than previously. More stringent structural analyses have been required to meet modern earthquake-resistant requirements.

The writer had the privilege of being appointed a member of the Canadian National Committee on Earthquake Engineering, sponsored by the National Research Council. This body, composed of engineers and seismologists, is meeting to formulate a new Earthquake Code for Canada.

There are certain well-defined regions known to be subject to earthquakes, and the Pacific Coast of British Columbia is one of them. Considerable knowledge has been gained in the last three decades about the behaviour of structures subjected to earthquake forces. Design criteria and codes have been developed. In spite of this, however, the unknowns and complexities are still great, and an earthquake-resistant design is still not fully possible by means of mathematical analysis or rules of procedure.

Earthquakes consist of horizontal and vertical ground vibrations, vertical movements being generally so small that they may be disregarded. When the ground underneath a structure is moved suddenly to one side the building will tend to remain in its original position because of its inertia. The acceleration of the horizontal movement varies, and its maximum value is the yardstick commonly adopted for measuring the equivalent static force.

Lateral forces must be resisted by the walls or the framing system. All parts of the building must be tied together and stiffly braced so that the building will tend to move as a unit. Symmetrical arrangement of cross walls or approximate coincidence of the centre of mass with the centre of rigidity is desirable, otherwise stresses due to rotation must be taken into consideration.

Mathematical analysis by conventional methods becomes unwieldy and too time-consuming. This is when the electronic computer may be employed. Certain features of the Exhibit Hall and the Curatorial Building of the new British Columbia Museum were analysed by this means. The analysis of the Exhibit Hall indicated that deflections of the floor slabs during earthquakes could be excessive, and additional stiffening members were incorporated as a result.

Preliminary site investigations for vocational schools, gaols, and other institutions form a large part of the work of this Division. Proving adequate water supplies and negotiating sewage-disposal methods with local municipal governments and other public bodies are taking an increasing amount of time. In many instances the selection of a site is understandably not subject to a simple engineering or economic analysis.

Recent years have seen a high level of activity in the Public Works Department. Projects under construction, as well as those maintained by the Department, have increased in proportion. The administration of works, particularly in the early stages of construction, falls largely to the design engineers of this Division, who are, of necessity, most familiar with the plans. This, of course, reduces the amount of time available for design. Periods of overtime when offices and telephones are quiet helped to maintain production.

We wish to express our appreciation to all those who have been associated with us and who have helped to make this a rewarding and interesting year.

J. R. Simpson, S.Sc., A.M.I.C.E., Dip. Pub. Admin.,
Senior Structural Engineer.

REPORT OF THE LANDSCAPE ARCHITECT

"A creation in space is an interweaving of parts of space."—*Moholy-Nagy*.

A characteristic of contemporary architecture is the importance of plants and trees. These are not only pleasing incidentals, but an integral part of the design. The relationship of planting to building cannot be treated casually, for it is of major importance.

Modern planting areas inside a building, or closely associated with it outside, are practically part of the architecture, involving major decisions of design and organization. There are few plants, if healthy and not mutilated by unskilled maintenance, that are without charm and grace when displayed to advantage.

The outline of a tree silhouetted against a wall, its shadows on the surrounding paving, its motion in the wind, all add to its decorative value.

However, all the effect can be nullified if the material is unsuitable in type or are unthrifty specimens struggling against adverse environment, soil condition, or unskilled attention.

The Landscape Division gives close study to maintenance conditions to be met, and uses the most modern methods to ensure success. Even though thriving well-grown material is procured at the outset, it must still be given every chance to maintain its satisfactory condition. Soil must be properly prepared and of the right quality, correct fertilization given, and a high-quality maintenance programme carried out. That this care is worth while is strongly evidenced by the general improvement in Provincial Government grounds throughout the Province.

It is the writer's experience that planners tend to undertake at one time both too much and too little in regard to the planting areas. Frequently the location and size of the planting areas, their depth, facilities for draining and watering, could have been greatly helped if horticultural requirements had been properly understood.

Paving, curbs, wall surfaces, and canopies are part of the total scheme involving the planted area and cannot be considered independently. For example, the paving may be formal or informal, free draining or impervious. It may consist of large or small units. All these are conditions that have a direct bearing on the choice of plant material. The planting area cannot be treated as separate.

Many problems of this type occur with modern buildings; for instance, the grounds of the large building of the British Columbia Technical Institute in Burnaby, finished during this last year, and the new Courthouse at Quesnel.

Maintenance is an expense, and this fact must be met. Poor maintenance will ruin attractive and promising landscapes. This is no job for the unskilled. A strong back is not enough. In a restrictive or unfavourable environment, plants need daily care during the growing season. This is particularly true when they are in full public view. Careful and intelligent application of water and food is needed, so also is grooming and pruning. Faded leaves and spent flowers are both unattractive and untidy. To allocate these tasks to an unskilled person is neither fair to him or to the garden material. If he has other duties, he cannot give adequate attention to the plantings. Then the services of a professional gardener become necessary in an attempt to correct the damage due to neglect.

We, in the Public Works Department, believe we must take the lead, and that attractive well-maintained Government grounds will encourage similar efforts on the part of others.

The Landscape Division believes that a reasonable solution to the maintenance problem is to contract this work out to established horticultural firms. This method has operated with success in the larger establishments, and though some revision may become necessary, it is probably the best and most practical way of maintaining these grounds.

Smaller Government establishments, Courthouses, etc., are another problem and require a different approach. There is the same need, but they are in most cases too small to make contracts economical. There are two solutions. The first is to use a large measure of " hard " landscaping which can be kept presentable by a janitor. The other is the implementation of a movable skilled work crew with sufficient motive equipment to give rapid but technically correct and effective care.

The year's work has been gratifying. There have been problems, but much success. It has been satisfying to watch planted areas come to full production, and I would like to thank those of my colleagues and staff who have given of their help so freely.

R. H. SAVERY,
Landscape Architect.

" AIR-BORNE GARBAGE "

This is the title of a colour film produced by the Air Pollution Control Society, located in Vancouver, B.C. (It is an excellent film and available for group viewing).

The fact that the Air Pollution Society exists, is sponsored and financed by civic authorities, expends considerable amount of volunteer effort in serious study of this subject, is evidence of concern over air-pollution problems.

Air pollution knows no boundaries. Surrounding areas contribute to and suffer from air pollution as does the urban community. By-laws with teeth are being enacted in cities and municipalities where the problem was not recognized as important a few years ago.

Why this concern over air pollution?

Those who have waited upon delayed aircraft, the aeroplane pilots, the marine navigators, and those who have experienced the odour-bearing variety, are conscious of one answer—smog.

The phenomenon of temperature inversion and presence of moisture-laden ocean air aid the creation of smog in the Lower Mainland. No industrialized community is free of air pollution.

Health considerations are important. Each of us breathes 35 pounds of air a day. Solid pollutants settle on lungs and throat surfaces, and gaseous constituents are absorbed by the moist tissue, forming irritating acids. The increase in cancer and respiratory illnesses in urban areas is a grim reminder of the danger to health.

The deleterious effects of pollutants upon painted surfaces, the corrosion of exposed metals, the leaching of mortar and other building material, the soiling of fabrics and fine finishes are all well established and easily seen.

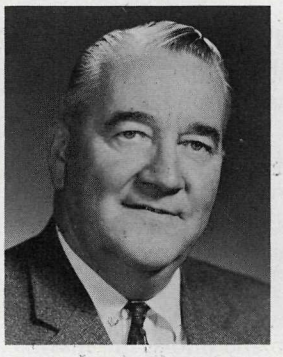
What are the principal sources of air pollution?

For the Vancouver urban area it is estimated that something between 340 to 640 tons a month of visible fallout are deposited. There are many sources of visible fallout—cement plants, foundries, grain elevators, diesel trucks and trains and ships, oil- and coal-fired heating plants, automobiles, back-yard incinerators, and household heating units.

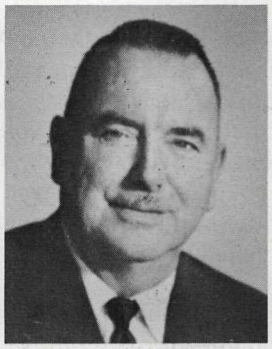
The invisible pollution is equally important to health, corrosion, and surface deterioration. This type of pollution amounts to some 100 tons a day in the Vancouver area: sulphur dioxide and hydrogen sulphide from oil burners, coal-burning plants, pulp-mills, oil refineries; hydrocarbons, nitrogen oxide, sulphur dioxide, aerosols, aldohydes, keytones, and organic acids from automobile exhausts; microptons and acids from food-processing plants—all form invisible but major components of our " air-borne garbage."

All of us have a common interest in improving the quality of the air we breathe. In many cases the reduction in emission of smoke, fumes, cinders, and odours can be of direct benefit in improved cycle efficiency, recovery of waste products, improved product cleanliness, and improved employee and public relations.

Project Inspectors



A. E. Sandstrom.



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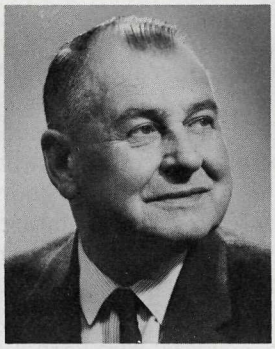

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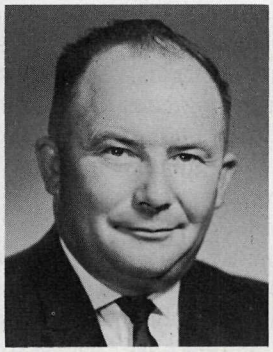

J. Coupal.

R. Dyson.

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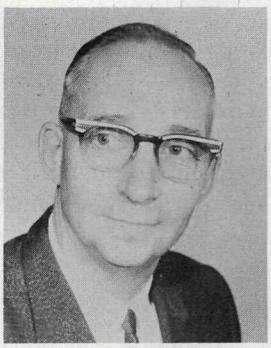

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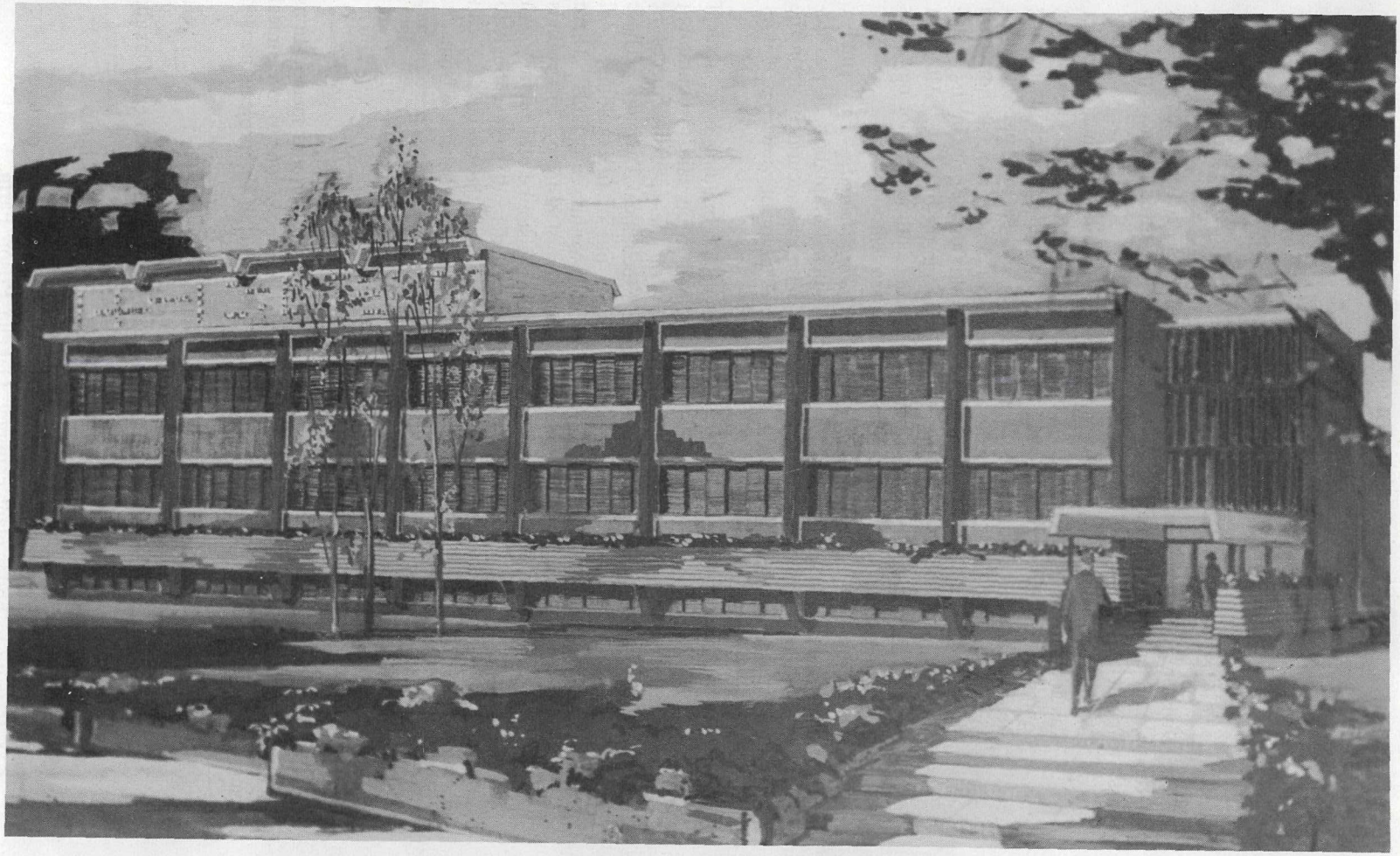
A. Bartle.



104-bed unit, Tranquille School.

REPORT OF THE MECHANICAL ENGINEER

"A friendly gesture is seldom out of order."—*Anon.*

DESIGN SECTION

The Division participated in most of the capital projects listed elsewhere in this Report, and has experienced a busy year. There are three of these projects we wish to point out as unusual. These are:—

(*a*) *The New Courthouse at Quesnel.*—In this building the heating-boiler was located in a mechanical penthouse together with the air-handling equipment. This arrangement has several advantages, such as putting the mechanical equipment in one place and thus saving space, using a low-pressure boiler unit and thus a more economical unit, a short stub stack saves the cost of a chimney and adds additional space in the building, minimizing the vertical runs of piping through the building. Although the idea of putting the heating-boiler in a roof penthouse is not new, this is the first use of this principle by the Department.

(*b*) *The New Courthouse at Ganges on Saltspring Island.*—This smaller Courthouse is heated electrically. This is not an adaptation, it was designed into the building. It is too early to comment accurately upon the use of electric heating from the Department's point of view, but it does appear to be very satisfactory.

(*c*) *The Veterinary Laboratory at Abbotsford.*—This building is a medical type of research centre. Special attention had to be paid to containing and sterilizing contagious diseases. Many of the specialty pieces of equipment required were designed by the Mechanical Division. These included a sewage-cooker for all the sewage out of the building. All sewage is boiled for half an hour before it goes to the septic tank. There is also a pathological incinerator with a capacity of reducing 250 pounds of viscera an hour to ash. This is done without smoke and odour. An autopsy table capable of handling a 3,000-pound load, large enough to take a moose. An animal-cage sterilizer in which the whole cage can be cleaned and sterilized at the same time. All the exhaust air from the building is passed through ultraviolet light sterilizers to prevent any chance of air-borne contagious diseases escaping.

MAINTENANCE SECTION

During the year this section of the Division prepared drawings and specifications for 41 projects involving repairs, additions, alterations, or renovations to mechanical services in Government buildings. The following lists a few of the projects carried out:—

(1) Renewal of plumbing, West Wing, Oakalla Prison Farm.
(2) New boiler feed-water system, Courthouse, Prince Rupert.
(3) Renewal of heating and ventilation system in main kitchen, Oakalla Prison Farm.
(4) Installation of a steam turbine fire-pump, Tranquille School.
(5) Renewal of laundry machinery, Skeenaview Hospital.
(6) Conversion of heating-boiler to oil firing, Courthouse, Courtenay.
(7) Repairs to boiler-plant chimney, Oakalla Prison Farm.

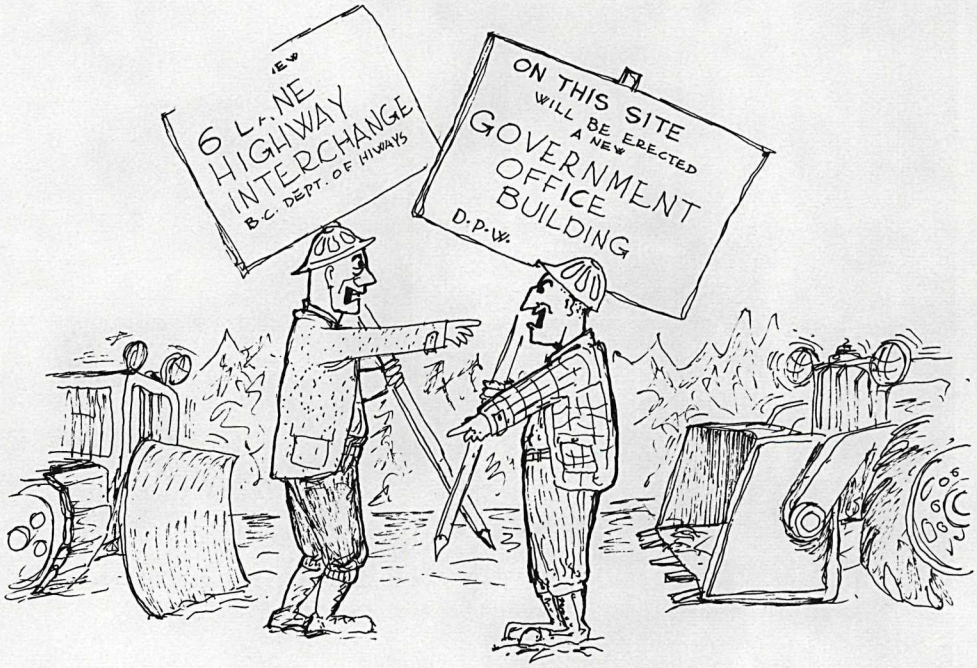
(8) Automatically controlled greenhouse ventilation system at Government House.

In providing headquarters supervision over the operation and maintenance of heating plants and mechanical services, 18 field trips were made, with visits to a majority of the Government office buildings and institutions.

The successful operation of mechanical systems is, in the main, dependent on the day-to-day attention which is given by our field staffs. We feel very fortunate in the high calibre of chief stationary engineers which we have in our service, and we would like to take this opportunity to thank them and their staffs for the good work they are doing.

In concluding this report, I would like to record my appreciation to all the divisions in the Department, and to the superintendents of works and project inspectors for the co-operation and assistance they have given us during the year.

W. E. MILLS, B.A.SC., P.ENG., DIP. PUB. ADMIN.,
Senior Mechanic *eer.*



Courtroom, Ganges Government Building.

Government Building, Ganges.

REPORT OF THE ARCHITECT-PLANNER

" While we consider when to begin, it becomes too late."—*Latin proverb.*

The work of the Division is becoming increasingly concerned with the use of land in all its phases as each year unfolds. The one just passed has proven the point most markedly. The greater part of the work load has been concerned with the exchange of lands and property, and the purchase or releasing of ownerships, together with all the legal and political facets involved.

A major part of the second half of this year has concerned the Legislative Precinct. Concern has been expressed by this Department at the ever-tightening ring of private development surrounding, and encroaching on, the 1961 perimeter line. Action has been taken to combat this trend, and during the past year some 45 lots involving over 6 acres of land have been purchased. Purchases have, as far as is possible, been made strategically with a view to satisfying the immediate demand for car-parking, withstanding the outside pressure of private urban renewal, and in such a position as to allow new structures to be constructed without recourse to extensive purchases.

The Precinct parking plan has progressed very smoothly. In spite of quite serious disruption caused by the displacement of almost 500 cars to make way for the Museum and Archives complex, the current position is better than before. Great credit must be given to the Civil Service Parking Committee, who have dealt with a great number of problems throughout the year.

Now nearing completion are land purchases for the vocational-school programme taking place throughout the Province, involving enlargement of existing areas and the choosing of entirely new sites in designated built-up areas.

The Division was consulted and took an active part, in so far as it affected Provincial planning, in support of the preparation of data for the traffic survey of the Capital area. This report has now been made public, after being prepared by a team of consultants.

A report on parking conditions and possible solutions at Essondale has been completed and handed to the standing committee for their consideration and action.

Planning policy and legal matters involving land assembly at Duncan for the new Government offices and Courthouse are being satisfactorily concluded, and the architectural construction is now well advanced.

A heavy programme of rental projects has been carried out throughout the Province, with some of the more successful, from the point of view of co-ordination, being carried out in the Capital. There appears to be no end in sight to the constant demand for more and more office and storage space as departments expand and new divisions are planned, which in turn, will become larger as the Province grows in population, stature, and wealth.

The survey of sites chosen for Governmental projects continues as in previous years, and the Department is indebted to those divisions in the Department of Lands, Forests, and Water Resources concerned with such matters.

Mention should also be made of assistance given by counsel of the Attorney-General's Department and officials of the Department of Highways in the preparation of easements and rights-of-way processed by this Division.

With the opening of the new Y.W.-Y.M.C.A. Building, another valuable step has been taken in the growth of the Cathedral Hill Precinct. Although not sited in the exact location recommended in the development plan, this does not prohibit

the eventual realization of the total scheme, which can be adapted as each project materializes. Probably the factor most necessary to ensure the steady fulfilment of any such plan is constant vigilance by those interested and already committed.

In the slower pace of the past, man was able to sit and think, towns and villages were able to blend with their environment and surroundings. Today man is making decisions without due regard to the future, the pressures being upon him 24 hours of the day, and likewise environment becomes merely the residual product of the technological revolution. If we are to be part of this environment, as our forefathers were able and learned to do, and if we wish to enjoy our longer lives, greater affluence, better education, and larger leisure time, then we must pay more respect to our land resources, from which we garner these riches, and from whose form we enjoy some of the wealth of experience open to us. Unless we create a realization of mutual trusteeship for this common environment into our day-to-day thinking, we shall achieve nothing.

W. D. LOUGHER-GOODEY, M.T.P.I., M.T.P.I.C., M.I.F.L.A.,
M.A.S.P.O., F.I.L.A., A.I.STRUCT.E.,
Architect-Planner.

Quesnel, Government Building.

Courtroom, Quesnel Government Building.

REPORT OF THE CHIEF ENGINEER, SAFETY ENGINEERING DIVISION

Any approach to the unification of three inspection services which were once independent entities must, of necessity, be a gradual process. Apart from the possibility of disturbing the relationship between the public and the Department, there is the impact of new methods on personnel. Old loyalties and esprit de corps developed over the years must yield to new concepts and then be guided toward progressive teamwork of one division.

To provide smooth entry into the project, attention was given first to the office procedures of the Boilers and Pressure Vessels Branch and the Gas Inspection Branch since they have an affinity in field operation. The Gas Branch presented little difficulty. Being a comparative newcomer, it had already adopted the best of the tried methods of the pioneers and evaded their pitfalls. With this advantage, a well-planned office organization had been established.

On the other hand, from its beginning in 1898 the Boiler and Machinery Inspection Department, as it was known then, had to pursue trial-and-result methods. It had to keep pliable enough to meet industrial growth, to absorb new techniques in pressure-vessel construction, and to adjust examinations to the available quality of plant personnel. Hence it was inevitable that its office procedures, although still quite functional, had become decidedly cumbersome.

To compound the situation, there was the diversity of revenue sources in the Boiler Branch—annual inspections of steam and refrigeration plants, inspection of equipment under construction, examinations of engineers and welders, licensing of contractors, survey and approval of designs. On occasion, revenue has been received from points as far apart as Sweden and Singapore, United States and Japan.

Two Orders in Council enabled us to revise fees and so render them amenable to addressograph billing and speedy computation for office staff, the public, and auditors. At once the office load was reduced. A scheme of revalidation of existing certificates of inspection by inspectors in the field and a new report form, which the inspector made out on the job-site, eliminated many typing hours. Correspondence relating to engineers was reduced by designing forms so that they would be returned with fees. Collection of fees for examinations in the field was abolished.

What fears we may have had were now being allayed by the willing co-operation of the office staff. The new order had eliminated time-consuming operations, enabling them to meet the onslaught of new work stemming from our industrial expansion.

Next on our programme is examination of field operations to determine how much inspection is necessary and to what limits.

RECOVERY BOILER COMMITTEE

Meetings were held in the recovery plants of Port Alberni, Celgar, and Woodfibre. Principal work of the Committee is the preparation of safety rules in construction and operation of recovery plants.

The members, who are chief engineers, are already implementing many of the rules in their own plants. Two delegates from the Black Liquor Recovery Committee of the United States attended and reported on progress in their own group.

It has been encouraging to note that throughout our work management has shown keen interest and has given us every assistance during visits to their mills.

D. DENHAM, M.E.I.C., P.ENG.,
Chief Engineer.

VANCOUVER COURTHOUSE

At the spring session of the Legislature in 1905 it was announced that the sum of $1,000 had been included in the estimates for " competitive designs " for a new Courthouse in Vancouver. In February, 1906, the Government bought the block bounded by Howe, Robson, Hornby, and Georgia Streets for $35,000. The then Premier, Mr. Bowser, said " the buildings should be situated fairly well back in the block and the grounds should be beautiful and transformed into what will practically be a small park."

On August 15, 1906, it was announced that the Courthouse would be built " right away." F. M. Rattenbury, of Victoria, who designed the Parliament Buildings, had been selected by competition as architect and had drafted " general plans." Messrs. Dalton and Eveleigh, of Vancouver, would prepare working drawings and would supervise construction.

On September 27, 1907, it was reported that the Honourable W. J. Bowser; the Honourable R. F. Green, Chief Commissioner of Lands and Works; and Mr. W. T. Dalton had decided on the exact placing of the building.

Work was not very far advanced before plans had to be altered. On March 14, 1907, the *Province* reported, under the heading " Forgot Registrar in New Court House," the following:—

> The architect who drew up the plans forgot that the registrar of the Supreme Court required office space, while two handsome little parlours, which might do well to serve afternoon tea in, were provided for the use of the Timber Inspector. The quarters provided for the Land Registry Office are deemed altogether too small even for present requirements.

Rattenbury drew up " new and enlarged plans," and on August, 1907, the contract was awarded to Messrs. McDonald, Wilson and Snider " to be completed August, 1909." Expenditure was to be $114,211.76.

Once again, however, and before completion, the building had to be enlarged. A new wing, designed by T. Hooper, architect, and supervised by Messrs. Dalton and Eveleigh, was added. The Public Works Report for 1911/12 shows two items: " Court House, Vancouver (completion), $125,000," and " Court House, Vancouver (New Wing), $100,000."

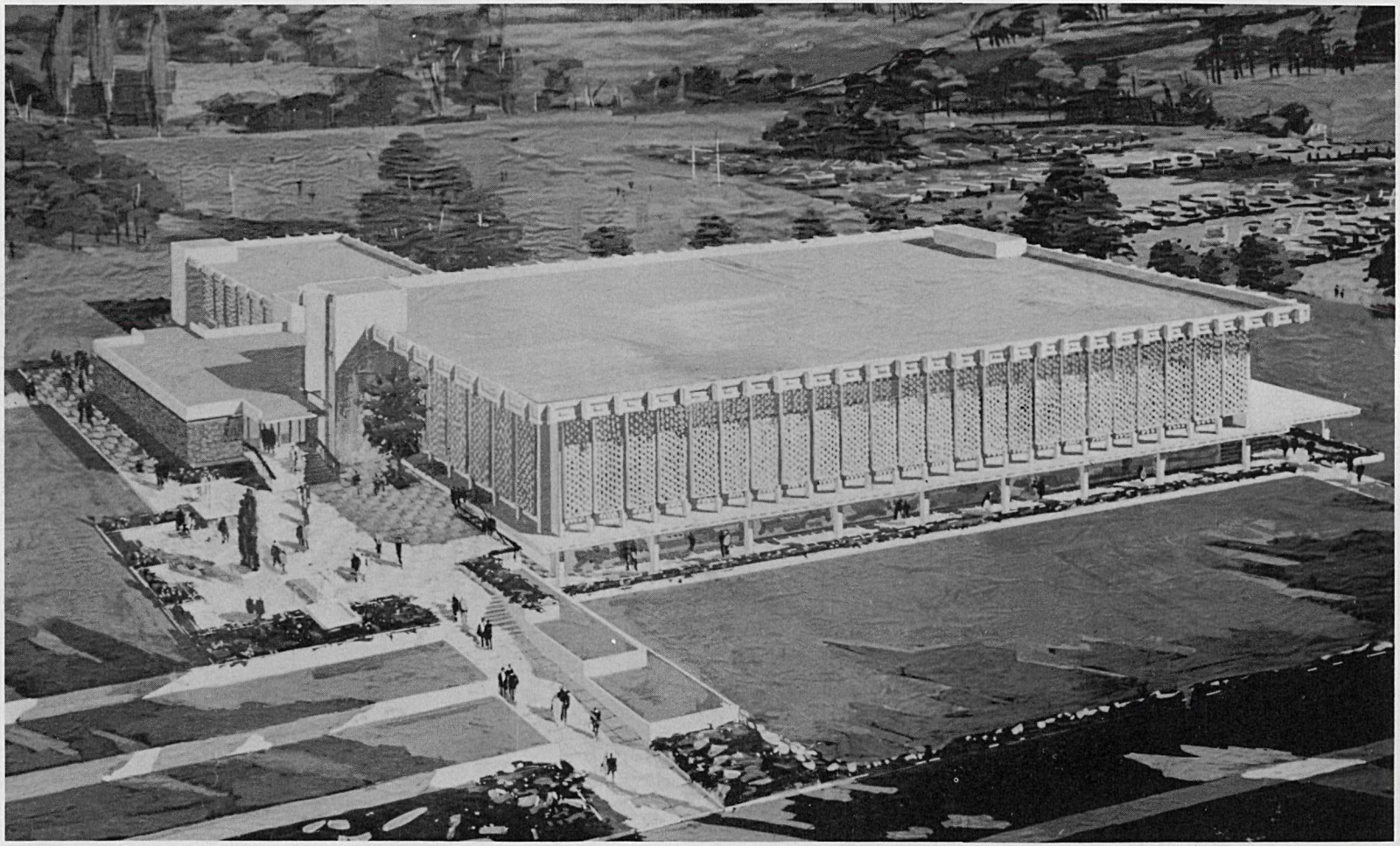
The main building was brought into service on October 9, 1911, when the *Province* headlined " Assizes Are Held in New Court House." During ceremonies L. M. McPhillips and Mr. Justice Murphy referred to the " splendid structure " and the " magnificent structure." In thanking them on behalf of the Government, Mr. Bowser said:—

> I regret it has been found that the new structure is not large enough to accommodate the demands of the local courts, but a new wing is now in the course of erection. If necessary, the Government will begin the erection, at a very early date, of another wing.

The other wing was never built, although preparatory sketches for an East Wing were drawn by Messrs. Dalton and Eveleigh at a cost of $4,000.

On December 22, 1912, almost eight years after the first announcement, the Victoria *Colonist* reported the completion of the West Wing, and thus the Courthouse as it exists today. Even so, it was still not quite finished, for in July, 1936, the Vancouver *Sun* ran a story:—

> COURT HOUSE—UNFINISHED BUSINESS
>
> For 24 years the granite [*sic*] lions have been waiting to be finished. The cleaning they have just had by sandblasting reminds the pioneers who watched them emerge from huge blocks of Haddington Island stone that much work remains to be done on the heads.
>
> S. M. Eveleigh, who, with his partner, the late W. T. Dalton, drew the plans for the Court House, recalls that the money for the lions ran out before the mane, nose and ears were finished. So John Bruce, stonecutter, went on to other work. The Government changed, and the need, a few thousand dollars to finish the lions, was forgotten in the shuffle.



Library, British Columbia Institute of Technology, Burnaby.

Abbotsford Animal Pathology Laboratory.

REPORT OF THE CONSTRUCTION AND MAINTENANCE ARCHITECT

"Knowledge is the only instrument of production that is not subject to diminishing returns."—*English Digest quote.*

MAINTENANCE AND BUILDING MANAGEMENT

A major step was taken during the period under review. The Province was divided into six work zones, and this necessitated readjustment of three Superintendent of Works areas. The move has resulted in the Department providing field supervision of daily maintenance operations in at least 80 per cent of the Province. Implementation of this plan has enabled the Department to decentralize authority and responsibility to the field for detailed routine work. The object has been to free Division headquarters staff to concentrate on major problems and provide technical and professional service to the zones.

In order to obtain 100 per cent supervision in the field, it is respectfully suggested that a Superintendent of Works be appointed and established in the Kootenays. In support of this contention it is pointed out that with the recent establishment of the vocational school at Nelson, with the possibility of additions thereto, with the completion of the Kootenay Fish Hatchery, in addition to existing Government property and leased accommodation, operational problems are increasing. It is difficult to handle these satisfactorily from headquarters.

Arising from the shortage of space in Government buildings caused by expansion throughout the Province, the Division has handled an unprecedented volume of work in preparing plans for suitable rented premises. Many of these required the preparation of detailed plans showing the subdivision of the space and additional facilities, such as counters, fitments, electrical outlets, etc. This Division's project inspectors were employed to ensure the rapid and satisfactory conversion, by the landlord's agent, of the premises.

The largest conversion of rented accommodation undertaken by this Division during the period under review was 1450 Government Street, Victoria. Here were relocated the Provincial Library Commission, Division of Vital Statistics, Department of Health, Civil Defence, and some temporary accommodation for the Museum. In addition, many smaller rented premises throughout the Province for the Department of Social Welfare, Motor-vehicles Branch, and other activities of the Government required our attention.

Some 68 specifications and numerous plans were prepared at headquarters, and contracts awarded for miscellaneous maintenance projects. Our five Superintendents with their maintenance crews were kept constantly busy trying to keep pace with essential maintenance and alteration work in their respective work zones. It has been of some concern that due to the volume of new buildings increasing the work load on all zones, we have had to sacrifice part of our programme of preventive maintenance. The advisability of preserving such a programme in the interests of economy is hard to dispute, but would entail at this time an increase in personnel.

The following list includes some of the larger maintenance renovations and minor new building construction contracts throughout the Province:—

(*a*) Restoration of the masonry and exterior fabric of the Fernie Courthouse.

(*b*) Provision of new toilet and bathing facilities, New Haven Borstal Institution, Vancouver.

(*c*) Major renovations to accommodation previously occupied by the Royal Canadian Mounted Police in Princeton Courthouse.
(*d*) Renovation, including new foundations, electric wiring, heating, etc., to three residences, Charlie Lake Mines Station.
(*e*) Relocation of bakery, Oakalla Prison Farm, Burnaby.
(*f*) Alterations to accommodation, Pearson Tuberculosis Hospital, Vancouver, to make suitable accommodation for aged patients.
(*g*) Government Agency residence, Kaslo.
(*h*) Interior decoration of Kelowna Courthouse.
(*i*) Extensive renovation to R.C.M.P. area in Penticton Courthouse.

Again I would like to acknowledge the aid we have received from Government Agents and others who have acted on our behalf in the Interior, for the help and co-operation they have given us in connection with our maintenance and operational programme. Appreciation is due to all members of the Division staff, including the Superintendents of Works, who, despite an ever-increasing work load, have managed to overcome many emergencies and continue to make an invaluable contribution to the success of this Department's operations.

CONSTRUCTION

The unprecedented increase in the number of buildings under construction in this fiscal period entailed the employment of eight project inspectors. These personnel were stationed throughout the Province on building-sites to provide continuous supervision, which has ensured a standard of quality, workmanship, and economy of a very high order.

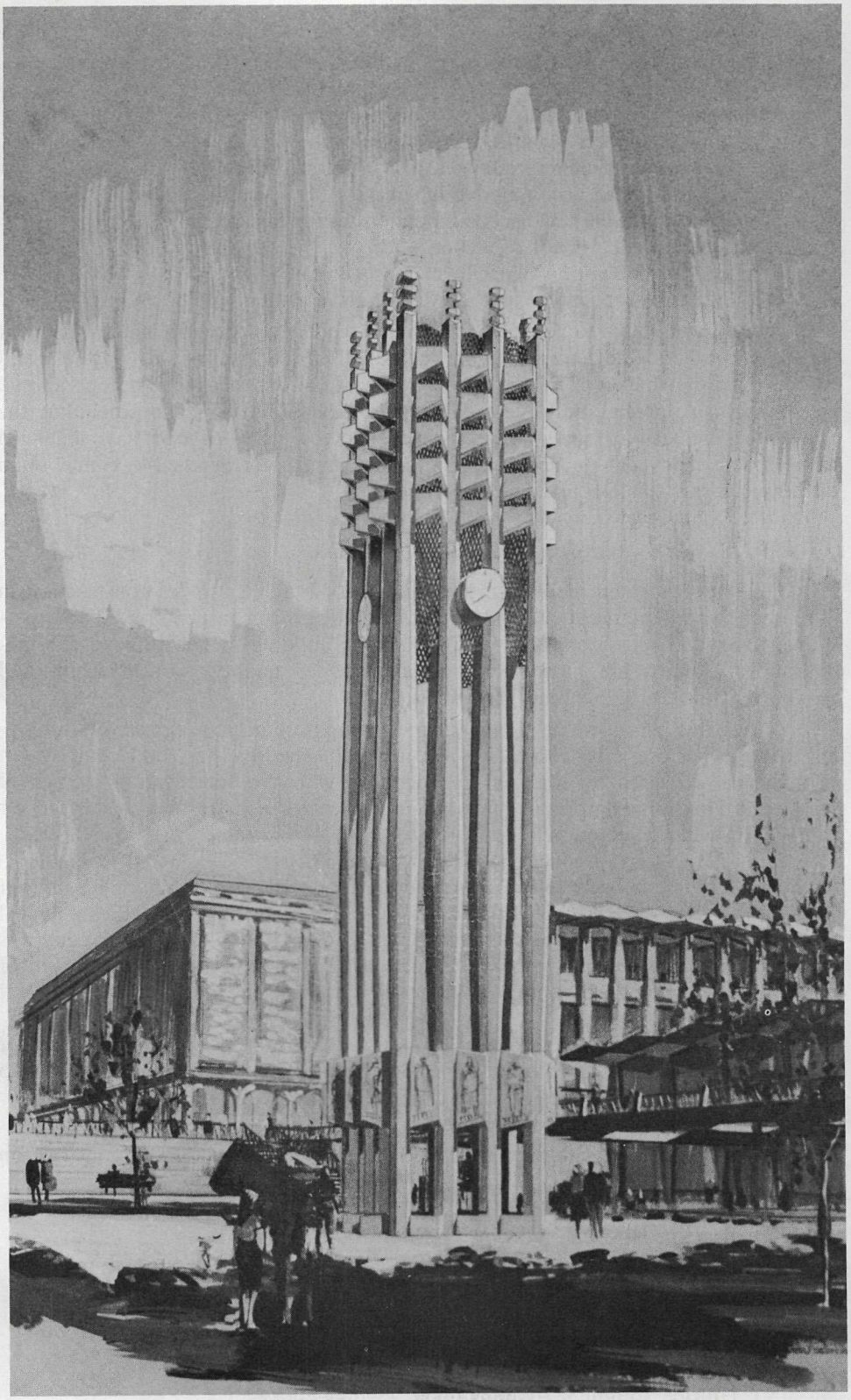
During this period we have implemented a programme of progressively supplying to these personnel instruments to ascertain the quality, size, and composition of materials delivered on site. In co-operation with the Specification Branch of the Design Division, samples of materials approved for use are sent to the site for comparison with delivered material.

Prior to the start of construction, the project inspector designated to supervise the construction has been called into headquarters. Besides familiarizing himself with the project, he has been briefed by other divisions regarding the technical aspects involved. During construction our representative is called into headquarters to report upon progress and receive instructions. These measures have proved of great value in keeping active liaison among all divisions, the work, and the general contractor.

Although headquarters personnel have, throughout the period, made a number of visits to building-sites, the value of periodic regular visits by senior officials who can resolve current difficulties or issue explicit directions on site to the contractor's representative cannot be overemphasized.

Project inspectors were appointed to the following projects under construction during this period:—

(1) Ganges Provincial Building.
(2) Pearson Hospital, Vancouver—day room.
(3) Fort Nelson Government Building.
(4) Kootenay Fish Hatchery, Phase 2.
(5) Duncan Provincial Building, Phase 1.
(6) Quesnel Courthouse, Phase 2.
(7) Penticton Highways establishment.
(8) Hillside Building, Essondale.



Carillon Tower, British Columbia Archives and Museum, Victoria.

(9) Hope—addition to R.C.M.P. Building.
(10) Dry-kiln, British Columbia Institute of Technology, Burnaby.
(11) Vernon—Dellview Hospital boiler-house.
(12) Garbage-handling, East Lawn, Essondale.
(13) Dormitories 2 and 3, Allco, Haney.
(14) Prince George—weigh-scale.

Also under construction, and accepted as substantially complete during this period, were the following:—

(*a*) Abbotsford Pathology Building (December, 1964).
(*b*) Classroom Block, Jericho Hill School.
(*c*) University of British Columbia—College of Education, Phase 2 (February, 1965).
(*d*) Oliver Courthouse (September, 1964).
(*e*) Creston Highways establishment (February, 1965).
(*f*) Public Works Department Building, Essondale.

In conclusion, I would like to state that close liaison with other divisions has been maintained, and frequent conferences have proved invaluable in increasing the efficiency of our operations.

STANLEY LLOYD, M.R.A.I.C., A.R.I.B.A., DIP. PUB. ADMIN.,
Senior Construction and Maintenance Architect.

REPORT OF THE CHIEF GAS INSPECTOR

THE ACT

There were no amendments made to the *Gas Act* or pursuant regulations during the past year.

THE BRANCH

Clerical staff of the Boilers and Pressure Vessels Branch and the Gas Inspection Branch were amalgamated under the Chief Engineer of the Safety Engineering Services Division.

Two offices were established in conjunction with the Electrical Energy Inspection Branch—one in Dawson Creek to serve the Peace River District and the other at Abbotsford.

Government Agents in 14 municipalities now issue single-family dwelling permits.

Night schools were conducted in Vancouver, Burnaby, Victoria, Abbotsford, and Prince George.

Developments in the gas-distribution industry are of great interest and may result in substantial changes and increases in this Division's activities. The emergence of liquefied natural gas as an industrial factor may result in smaller communities, not presently served, having gas-distribution facilities. It is not possible, at this time, to accurately forecast the extent to which this trend may develop, but it is known that serious thought is being given, by some centres, to the use of this convenience fuel. If this should become a significant factor, this Division may have to contend with an increased call on its services.

Wider use has been made of propane as a fuel. Originally this derivative was confined to relatively minor and very localized use, but recently its application has been widened to encompass larger installations. With the development of liquefied natural gas, this trend may be slowed or halted. Nevertheless, it is obvious that this Division must become more conscious of the need for vigilance as to the safety of installations.

ACCIDENTS

During the fiscal year there were no fatalities or major accidents caused by natural gas.

SUMMARY OF WORK

	1964/65	1963/64	1962/63
New designs checked, industrial approval	1,003	834	765
Gas codes distributed	580	2,021	590
Gas-fitters' licences issued	1,608	1,661	1,514
Gas contractors' licences issued	528	516	566
Provisional licences issued	521	513	621
Gas-fitters' examinations	159	169	210
Gas-fitters' re-examinations	54	46	48
Number of gas-fitters passed examination	116	147	158
Number of gas permits issued, municipalities	10,499	10,153	11,296
Number of gas permits issued by this Branch	14,303	14,558	13,534
Permit application pads distributed	377	688	680

A. J. KANEEN, P.ENG.,
Chief Inspector.

REPORT OF THE INSPECTOR OF ELECTRICAL ENERGY

BOARD OF EXAMINERS FOR ELECTRICAL CONTRACTORS

The Honourable Minister of Public Works has been pleased to appoint the following members to the Board, effective January 1, 1965: Mr. N. V. Beech, electrical contractor, representing the Vancouver Electrical Association; Mr. H. Reid, electrical contractor, representing the Associated Electrical Contractors of British Columbia; and Mr. L. Glover, electrical inspector for the Municipality of Burnaby, representing cities and municipalities. Other members of the Board are Mr. L. Robson (Chairman), Chief Inspector of Electrical Energy, and Mr. G. A. Harrower, Assistant Inspector of Electrical Energy. Eight meetings were held throughout the year.

The total number of certificates of competency in effect during the year was as follows:—

Class A	220	Class PC	102
Class B	458	Class TC	1
Class C	530		
Class PA	57	Total	1,459
Class PB	91		

Three hundred and three candidates for electrical contractors' certificates of competency were examined during the year, with the following results:—

Class	Number of Candidates Examined	Passed	Failed
A	50	32	18
B	128	68	60
C	125	64	61
	303	164	139

PERMITS

Effective May 1, 1964, a new system was instituted whereby applicants for permits for wiring in single- or duplex-family dwellings may apply to any Government Agency office throughout the Province. This service is now available at 38 Agency offices as well as at six offices of this Branch.

It is planned to extend this availability to other and larger types of electrical installations as time and opportunity will permit.

The total number of permits issued during the year was as follows:—

April, 1964	3,944	November, 1964	4,271
May, 1964	3,816	December, 1964	3,468
June, 1964	4,408	January, 1965	3,233
July, 1964	4,030	February, 1965	3,639
August, 1964	3,891	March, 1965	4,036
September, 1964	4,349		
October, 1964	4,318	Total	47,403

This represents a net increase of about 5½ per cent over the previous year.

DISTRICT OFFICES AND INSPECTIONS

Office Location	Inspections
Abbotsford	2,907
Alberni	2,570
Chilliwack	2,482
Courtenay	3,699
Cranbrook	2,088
Dawson Creek	1,801
Duncan	2,804
Fort St. John	1,666
Kamloops	3,576
Kelowna	2,342
Langley, Delta, and White Rock	2,569
Nanaimo	2,708
Nelson	1,825
New Westminster (three inspectors)	4,873
Penticton	3,117
Powell River	1,920
Prince George (two inspectors)	6,950
Prince Rupert	2,771
Quesnel	2,271
Richmond (two inspectors)	4,275
Trail	1,872
Vernon	2,298
Victoria (three inspectors)	7,605
Total	70,989

CANADIAN STANDARDS ASSOCIATION

The Chief Inspector continued to represent the Province at meetings of the Canadian Standards Association. Two meetings each of the Approvals Council (Electrical) and the Canadian Electrical Code, Part I, Committee were attended —one each in June in Charlottetown, P.E.I., and one each in November in Toronto.

The work involved in maintaining up-to-date standards for electrical installations continues to be very active. No less than approximately 200 subjects are in the committee stage. The end result of this activity is that Canada has available to it one of the most complete and comprehensive sets of electrical standards to be found anywhere.

EQUIPMENT SECTION

The volume of electrical equipment offered for installation which is not listed by the National laboratory service continues to increase. This year 435 applications were accepted, requiring inspection and labelling of 2,243 pieces of equipment. This indicates an increase in applications of 115 over the previous year, or a percentage increase of approximately 35 per cent.

Much of this type of equipment is special, and the scope is continually expanding. Included are items required for hospitals, schools, traffic-signal applications, and industry. Examples of the two latter categories are the new equipment which was custom built for the First Narrows Bridge north approaches and special equipment for the new chemical plant at Squamish, which was of Italian origin.

Small manufacturers are assisted in starting production on new lines of equipment until such time as they can be processed for approval through the National laboratory service.

EXAMINATION OF MOTION-PICTURE PROJECTIONISTS

The Branch assisted the Provincial Fire Marshal in conducting seven examinations for projectionists. The regulations covering such examinations provide that the Inspector of Electrical Energy be a member of this Examining Board in company with the Fire Marshal. In this connection, all fees arising from these examinations accrue to the credit of the Fire Marshal's department.

POLE-LINE PERMITS

During the year the Branch checked 1,069 applications for the erection of pole-lines on Crown lands or Provincial highways. Recommendations on each application were forwarded to the Regional Engineer of the Department of Highways. This is approximately 10 per cent higher than last year.

ACCIDENTS

There were 14 accidents recorded during the year, and six of these were fatal.

May 8, 1964, at Richmond: One person was electrocuted and one injured when a crane fall line contacted a 12-kilovolt transmission-line.

August 24, 1964, at Vancouver: One person was electrocuted when a crane cable contacted a 220-volt power-line.

August 24, 1964, at Fort St. John: One person was electrocuted when a supporting cable came in contact with a 7,200-volt primary line.

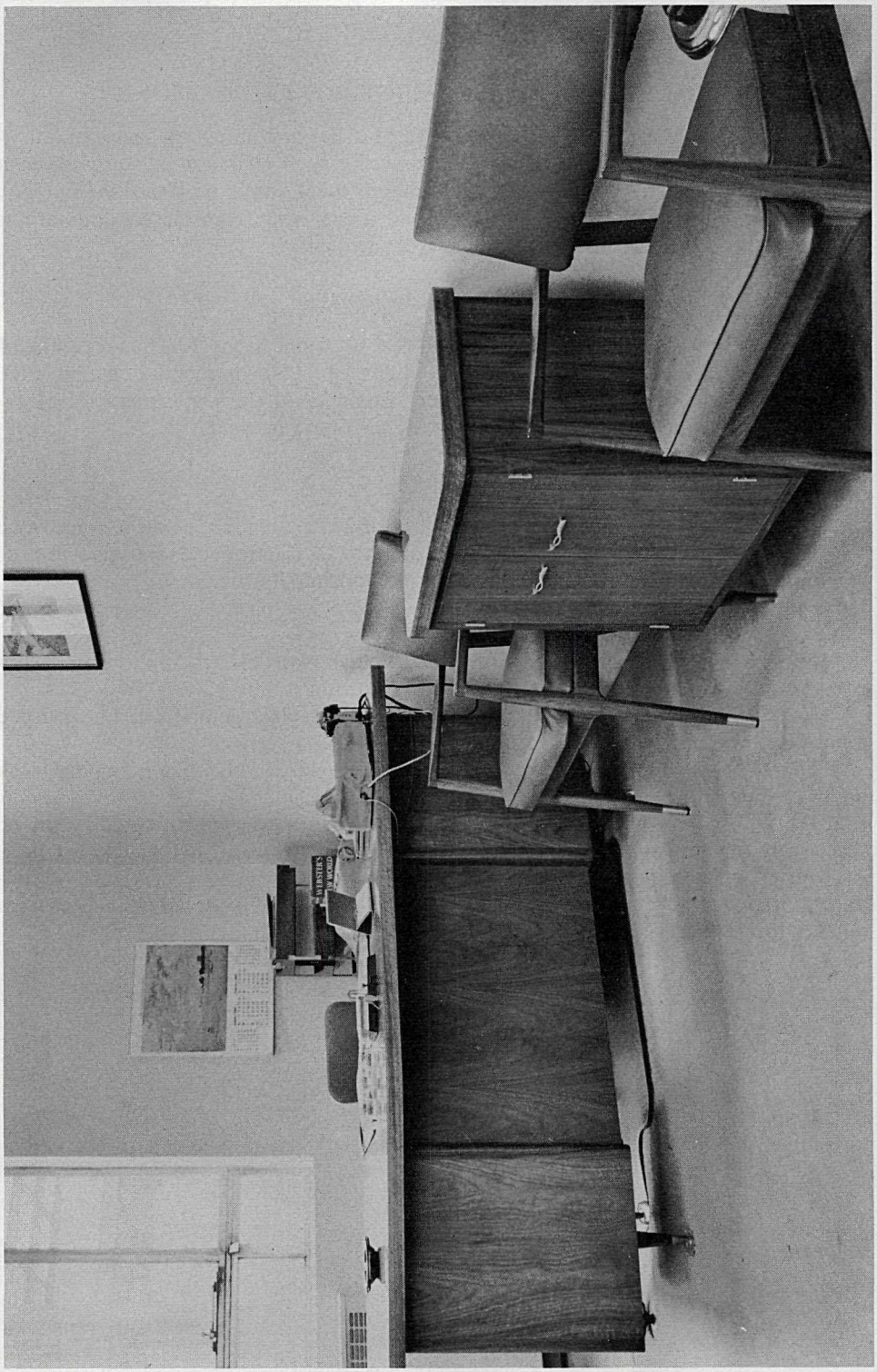
December 16, 1964, at Kitimat: One person was electrocuted when he grasped a bus bar accidentally.

March 20, 1965, at Nelson: One person was electrocuted when a logging-truck boom contacted, or came close to, a centre phase line.

April 7, 1965, at North Okanagan: One person was electrocuted when he apparently, without authority, attempted to close a cut-out on a B.C. Hydro pole.

May I again express my appreciation for your splendid co-operation and continued interest in our problems and to your Departmental staff for valuable assistance rendered during the year.

L. ROBSON, P.ENG.,
Chief Inspector of Electrical Energy.



This furniture was designed and built by craftsmen of the Department of Public Works in Victoria.

REPORT OF THE CHIEF INSPECTOR OF BOILERS AND PRESSURE VESSELS

GENERAL

The heavy work load in the design office shows no easement over the last three years, a consequence of the steady industrial growth. Design office staff has been augmented by an inspector drawn from the field, which accounts for the drop in inspections.

Although our local boiler-shops are finding it difficult to compete with Eastern manufacturers in boiler construction, they are busy constructing pressure vessels for our new pulp-mills and the oil fields and refineries of Alberta and Saskatchewan.

OPERATIONS

All district inspectors report brisk activity in their areas as new industries appear; consequently, their itineraries are taking longer; and since much of their time is consumed in the inspection of heating plants and small operations, we are giving consideration to the recruitment of Grade 1 inspectors to do this work.

Welders, who are the key men in the heavy-construction industry, are in demand; our training facilities are excellent but cannot supply enough welders; many are entering the Province from other parts of Canada. The testing of welders, therefore, is also a heavy task and promises to become a more specialized operation of this Branch. The new welding regulations approved in 1961 have proved helpful and functional to both industry and ourselves.

Efficiency in office operations has advanced with new methods of certification of boilers and of collection of revenue, and a new type of report form has reduced typists' work and speeded up the report to the owner.

REGULATIONS

A revised edition of Regulations Respecting Stationary Engineers (Part VI) was approved by Order in Council No. 1568 on June 8, 1964. Among the highlights of the new edition are better educational credits, recognition of certificates issued by other Provinces, and a scheme for apprenticeship.

Regulations as to fees (Part V) were completely redrawn and approved by Order in Council No. 2213 on August 6, 1964.

Regulations Governing Low-pressure Heating Plants (Part IV) were amended by Order in Council No. 2212 on August 6, 1964, to introduce a single fee for installation permits.

Orders in Council Nos. 2212 and 2213 have eased the task of computing fees, not only for ourselves, but for manufacturers, contractors, and owners also.

ACCIDENTS

Two persons were killed and two injured in separate accidents to boilers and pressure equipment, as follows:—

April 10, 1964, at Port Kells, North Surrey, an oil heater used at an asphalt-mixing plant exploded due to overheating. No one was injured.

April 18, 1964, at Port Alberni, an accumulation of hydrocarbon gas in an oil barge exploded when a welder was making repairs on the deck. The welder was killed.

May 30, 1964, at Watson Island, Prince Rupert, one workman was killed and two burned by hot ashes while repairing a precipitation hopper at a pulp-mill.

August 7, 1964, at Port Mellon, a dissolving-tank exploded when detonations became excessive, resulting in the breaking of the spout, causing an excessive run-off of smelt, setting up a chain reaction of heavier detonations, and filled the boiler-room with lethal gas and short-circuiting electrical equipment. Fortunately the situation was brought back under control without injuries to anyone.

December 17, 1964, at Vancouver, a water tube boiler suffered a furnace explosion due to failure of ignition of an oil burner. Several tubes were distorted and the damage of boiler casing was extensive. No one was injured.

September 20, 1964, at Prince Rupert, a boiler was damaged due to a low water condition caused by a defective feed-water control.

October 18, 1964, at Elk Falls, a tube ruptured in a recovery boiler, causing an emergency shut-down. The tube had developed a pinhole leak, which in turn damaged adjacent tubes. No one was injured.

Complete investigations were made of all these accidents, and full reports with recommendations are on file.

SUMMARY OF WORK

	1964/65	1963/64	1962/63
Designs registered	843	872	782
Boilers built under inspection	91	131	108
Pressure vessels built under inspection	1,503	1,433	1,291
Total boilers inspected	4,120	4,378	4,582
Total pressure vessels inspected	2,182	2,531	2,203
New boiler installations	399	443	389
Engineers examined	798	570	544
Welders examined	1,301	1,201	1,427

ENGINEERS' EXAMINATIONS

Class	Number Examined	Passed	Failed
First, A	20	11	9
First, B	9	8	1
Second	153	97	56
Third	162	121	41
Fourth	336	249	87
Boiler operator, A	57	49	8
Boiler operator, L.P.B.	53	34	19
Boiler operator, H.P.B.	8	5	3
Totals	798	574	224

WELDERS' TESTS

Grade	Number Examined	Passed	Failed
A	290	259	31
B	370	289	81
C	55	45	10
D	78	70	8
Oxy-acetylene	91	84	7
Special	212	201	11
Provisional	205	196	9
Totals	1,301	1,144	157

S. SMITH,
Chief Inspector.

REPORT OF THE COMPTROLLER OF EXPENDITURE

The following pages present in detail the expenditures relating to the construction, alteration, and repairs on the various Government buildings and institutions, etc., coming under the management, charge, and direction of the Minister of Public Works.

A. E. RHODES,
Comptroller of Expenditure.

STATEMENT OF EXPENDITURES, FISCAL YEAR 1964/65

ADMINISTRATION AND MAINTENANCE VOTES

(For details *see* Public Accounts.)

Vote 290—Minister's Office	$23,492.32
Vote 291—General Administration	198,594.82
Vote 292—Government Buildings (Maintenance)	5,449,953.52
Vote 294—Rentals	752,923.10
Vote 295—Safety Inspection Division, Vancouver (includes Gas Inspection, Steam Boiler Inspection, and Electrical Energy Inspection Branches)	724,078.32
	$7,149,042.08
Less credits—	
Rentals and recoverable items, Government buildings, etc.	*143,591.72*
Repayable by commissions, boards, etc.—Rental Vote	*31,985.69*
	$6,973,464.67

CAPITAL

Vote 293—Construction of Provincial Buildings (*see* expenditure by building listed below)		$9,110,234.62
Less Parliament Buildings parking-lot fees		*43,368.00*
Less Federal Government contributions—		
Project No. 486-B—Museum and Archives Building, Victoria	*$41,746.97*	
Project No. 231-B-4—Nanaimo Vocational School	*21,580.74*	
Project No. 299-B—Burnaby Vocational School	*52,421.60*	
Project No. 312-B—Prince George Vocational School	*8,188.83*	
Project No. 401-B—Burnaby Institute of Technology	*505,964.87*	
Project No. 412-B—Kelowna Vocational School	*73,499.27*	
Project No. 429-B—Nelson Vocational School	*143,187.51*	
Project No. 481-B—Dawson Creek Vocational School	*260,790.62*	
		1,107,380.41
		$7,959,486.21

SUMMARY

Net expenditure, Department of Public Works—	
Administration and maintenance	$6,973,464.67
Capital	7,959,486.21
	$14,932,950.88

VOTE 293—CONSTRUCTION OF PROVINCIAL BUILDINGS

Project No.	Description	Expenditure
456-B	Agriculture Testing Laboratory, Vancouver—addition	$13,344.64
453-B	Allco Infirmary, Haney	177,248.37
458-B	Abbotsford—Animal Pathology Building	380,286.00
473-B	Abbotsford—office building, Random Sample Poultry Testing Station	7,840.48
480-B	Atlin—outpost hospital	12,240.35
421-B	Bull River Fish Hatchery	222,875.68
460-B	Burnaby Mental Health Centre—playground area	10,217.30
484-B	Burnaby Mental Health Centre—repairs to roofs and paved courts	11,386.35
299-B-2	Burnaby Vocational Training School—Public Works buildings	77,954.71
478-B	Burns Lake—purchase of residence for the District Superintendent, Department of Highways	16,953.00
433-B	Charlie Lake—Department of Mines—residences	9,858.90
334-B	Chetwynd duplexes—connecting water supply and sewage system	11,108.41
	Colony Farm—	
6-B-33	Power-line	10,221.50
6-B-34	Repairs to piggery	8,013.80
6-B-37	Repairs to Coquitlam River Bridge	9,712.90

VOTE 293—CONSTRUCTION OF PROVINCIAL BUILDINGS—*Continued*

Project No.	Description	Expenditure
457-B	Creston—Highways establishment	$253,627.36
420-B	Dease Lake—maintenance depot	30,223.40
25-B-12	Dellview Hospital, Vernon—addition to boiler-house	69,782.60
468-B-1	Duncan—Government offices	3,023.43
	Essondale—	
5-B-102	Alterations and renovations to kitchen and staff rooms, dining-room areas	211,327.02
5-B-108	Hillside Building	44,476.52
5-B-116	Landscaping, roads, parking, etc.	33,015.15
5-B-117	Underground steam and condensate piping to North Lawn Building	15,000.00
5-B-119	Garbage-handling incinerator	125,537.63
5-B-120	Industrial Therapy Buildings	13,802.01
5-B-121	Structural alterations	49,405.04
5-B-123	Renovations, Valleyview, Units 1, 2, and 3	15,000.00
5-B-129	Toilet facilities	3,000.00
5-B-130	Fire-stairs, Centre Lawn Building	4,928.73
5-B-131	Laundry equipment	15,874.64
5-B-132	Emergency electric power, boiler-house	6,417.75
5-B-350	Public Works building	75,059.13
451-B	Fernie Courthouse—exterior restoration	12,575.75
482-B	Fort Nelson—Government office building and residence	17,375.17
485-B	Ganges—Government office building	83,047.23
289-B	General expenses (planning, surveys, supplies, etc.)	280,839.08
467-B	Golden—residence for Government Agent	17,195.00
384-B	Grounds improvement—various government buildings (Provincial)	47,483.20
	Haney—	
123-B-5	Development of grounds and irrigation	6,672.87
123-B-16	Sewage plant and water supply	15,767.65
399-B	Helmcken House—renovations	3,959.46
450-B	Hope—additional lockup facilities	24,724.80
483-B	Hudson Hope—road foreman's residence	11,003.00
	Jericho Hill School—	
79-B-10	Dormitory unit and development	4,834.15
79-B-11	Classroom and Industrial Arts Building	788,939.33
474-B	Jordan River—Health Supplies Emergency Warehouse	38.80
477-B	Kaslo—Government Agent's residence, purchase of property and purchase and erection of pre-fab building	16,464.67
416-B	Langford—addition to sign-shop	25,950.40
	Oakalla—	
39-B-18	Security fence	2,883.97
39-B-62	Roads (drainage and parking)	1,639.15
39-B-63	Additional gaol facilities (Westgate)	9,150.06
39-B-64	Women's gaol—electrical distribution system	3,947.45
39-B-65	Kitchen—renovations	33,374.62
39-B-66	Conversion to gas	25,802.33
39-B-67	Security—West Wing	11,488.64
39-B-68	West Wing	66,244.50
39-B-69	Westgate—roofing	47,055.73
382-B	Oliver Courthouse	274,494.07
	Pearson Tuberculosis Hospital—	
31-B-9	Modifications	13,098.92
31-B-10	Activity room	22,414.73
471-B	Penticton—Department of Highways garage and yard site	196,335.91
381-B	Prince Rupert—Forestry building	9,556.01
491-B	Prince George—weigh-scale station	Nil
479-B	Prince George area—structural alterations, Zone 5	8,974.69
455-B	Quesnel Courthouse	714,850.75
452-B	Revelstoke Courthouse—exterior restoration	6,505.34
24-B-6	Skeenaview Hospital—laundry equipment	10,335.89
	Tranquille—	
10-B-12	Water supply and sewage disposal	5,405.21
10-B-41	Main building—alterations	49,997.04
10-B-44	Renovations to boiler-house	13,065.47
10-B-49	Playground	9,997.76
10-B-50	Conversion of additional facilities	70,450.60
476-B	Vancouver Island Gaol	5,334.46

VOTE 293—CONSTRUCTION OF PROVINCIAL BUILDINGS—*Continued*

Project No.	Description	Expenditure
408-B	Vancouver area—structural alterations	$32,926.88
489-B	Vancouver—Pesticide Laboratory	35,337.41
488-B	Vancouver—Civic Square, acquisition of property	1,912,431.80
292-B	Victoria area—structural alterations	66,712.76
385-B	Parliament Buildings—parking facilities	33,652.49
487-B	Parliament Buildings Precinct—acquisition of property	20,620.00
500-B	Parliament Buildings area—purchase of certain property and preparing it for parking	192,100.00
339-B	Victoria Law Courts	9,100.93
464-B	Victoria—Mental Health buildings, Lee Avenue and Fort Street—renovations and part purchase of property	108,665.07
486-B	Victoria—Provincial Museum	116,377.82
492-B	Victoria—Motor-vehicle Building, Data Processing Centre	23,446.29
	The Woodlands School—	
7-B-40	Landscaping, fencing, paving, etc.	23,640.47
7-B-46	Structural alterations	20,270.12
369-B	Education—College of Education, University of British Columbia, Vancouver	244,668.87
	Vocational—	
401-B	Burnaby—Institute of Technology	632,815.99
299-B	Burnaby Vocational School	51,812.06
481-B	Dawson Creek Vocational School (transfer charges and security and maintenance costs)	356,952.69
412-B	Kelowna Vocational School	107,424.72
231-B-4	Nanaimo Vocational School	28,413.92
429-B	Nelson Vocational School	123,630.74
312-B	Prince George Vocational School	11,080.93
	Highways, garages, etc.—	
415-B	Albert Canyon—equipment-shed and oil-house (Revelstoke)	15,315.21
413-B	Castlegar—equipment-shed and oil-house (Rossland-Trail)	4,985.67
493-B	Hazelton—foreman mechanic's residence (Skeena (East))	11,553.00
475-B	Prince George—Department of Highways yard, fencing (Fort George)	8,262.12
		$9,110,234.62

TENDERS RECEIVED AND CONTRACTS AWARDED FOR BUILDINGS

Description of Work and Names of Tenderers	Amount	Remarks
Roads and Drainage Work around British Columbia Institute of Technology, Burnaby:		
Beaver Construction Co.	$74,000.00	
Standard General Construction International Ltd.	49,828.00	
Burns & Dutton Construction (1962) Ltd.	58,650.00	
Jamieson Construction Co. Ltd.	47,620.00	Awarded.
British Columbia Vocational School, Nelson—Lawn Construction and Plant Material and Preparation:		
Holland Landscapers Ltd.	55,727.00	Awarded.
Jensen & Johnston Landscape Contractors Ltd.	73,675.00	
Bert Murray	79,082.00	
Conniston Construction Co. Ltd.	53,133.00	
British Columbia Vocational School, Kelowna—Plant Material to Be Supplied for the Landscape:		
Kelowna Nurseries Ltd.	15,417.00	
Murray Nurseries Ltd.	8,896.62	
Holland Landscapers Ltd.	5,100.00	Awarded.
Janitorial Service, British Columbia Institute of Technology, Burnaby:		
Excelsior Building Maintenance Ltd.	123,096.00	
American Building Maintenance Co. Ltd.	144,600.00	
Best Cleaners & Contractors	144,400.00	
Modern Building Cleaning Services of Canada Ltd.	153,095.00	
National Building Maintenance Ltd.	102,000.00	Awarded.
Landscape Development of Grounds and Concrete Work, British Columbia Institute of Technology, Burnaby:		
Holland Landscapers Ltd.	82,538.00	
Jensen & Johnson Landscape Contractors Ltd.	73,844.00	Awarded.
Conniston Construction Co. Ltd.	89,640.00	
Irrigation, British Columbia Vocational School, Kelowna:		
Pacific Pipe & Flume Ltd.	59,653.00	
Pacific Lawn Sprinklers Ltd.	38,384.00	Awarded.
Construction of Residence, Golden:		
Burnham Construction Ltd.	17,850.00	Awarded.
Kriese Bros. Construction	18,964.00	
Eyford Anderson Construction Co. Ltd.	18,575.00	
Electrical Circuit Installation, Public Works Building, Essondale:		Not awarded.
Paragon Electric Ltd.	33,535.00	
C. H. E. Williams Co. Ltd.	38,649.00	
Ricketts-Sewell Electric Ltd.	33,250.00	
Peterson Electrical Construction Co. Ltd.	39,151.00	
Highways Establishment, Penticton:		
Bennett & White Construction Co. Ltd.	208,888.00	
Interior Contracting Co. Ltd.	294,275.00	
Kenyon & Co. Ltd.	189,867.00	Awarded.
C. J. Oliver Ltd.	201,999.00	
Janitorial Service, Provincial Government Buildings, Vancouver, Works Zone No. 2:		
Modern Building Cleaning Services of Canada Ltd.	88,584.00	
American Building Maintenance Co. Ltd.	54,000.00	
Excelsior Building Maintenance Ltd.	85,920.00	Awarded.
National Building Maintenance Ltd.	102,000.00	
Conversion, 1904 Fort Street, Victoria:		
Burns & Dutton Construction (1962) Ltd.	56,520.00	
M. P. Paine & Co.	53,720.00	Awarded.
Provincial Government Building, Quesnel:		
Burns & Dutton Construction (1962) Ltd.	1,172,000.00	
Bennett & White Construction Ltd.	1,184,136.00	
Narod Construction Ltd.	1,159,217.00	Awarded.
Addition to R.C.M.P. Detachment, Hope:		
R. A. Adair Construction Ltd.	27,661.00	
Burdett Construction Co. Ltd.	30,350.00	
Pine Tree Construction Co. Ltd.	24,948.87	Awarded.
Walter Cabott Construction Ltd.	29,380.00	
Irrigation, British Columbia Vocational School, Burnaby:		
Pacific Lawn Sprinklers Ltd.	19,194.00	
Terra Irrigation Ltd.	18,460.00	Awarded.

TENDERS RECEIVED AND CONTRACTS AWARDED—*Continued*

Description of Work and Names of Tenderers	Amount	Remarks
Irrigation, British Columbia Vocational School, Nelson:		
Colchester Supplier Ltd.	$33,154.00	
Pacific Pipe & Flume Ltd.	25,163.40	Awarded.
Pacific Lawn Sprinklers Ltd.	26,163.00	
Experimental Wood Kiln, British Columbia Institute of Technology, Burnaby:		
Burns & Dutton Construction (1962) Ltd.	34,550.00	
Bristol Construction Co. Ltd.	36,900.00	
Cain Truscott Contractors Ltd.	30,944.00	Awarded.
E. H. Shockley & Son Ltd.	32,477.00	
Construction of Residence, Kaslo:		Not awarded.
Guy Guido	20,378.00	
Christmas Seal Auditorium, Vancouver:		
Hall Construction Ltd.	17,027.00	
E. H. Shockley & Son Ltd.	14,579.00	
Alex Park & Son Ltd.	14,490.00	Awarded.
Aurias Construction Co. Ltd.	18,811.00	
Addition to Boiler-house, Dellview Hospital, Vernon:		
D. L. French Construction Ltd.	69,675.00	Awarded.
Gustavus Construction Ltd.	79,384.00	
Smith Bros. & Wilson Ltd.	71,987.00	
Alterations and Garbage-handling Facilities, East Lawn Building, Essondale:		
Lickley Johnson Palmer Construction Co. Ltd.	127,126.00	
Hall Construction Co. Ltd.	117,299.00	
Kennett Construction Ltd.	115,480.00	Awarded.
Maintenance of Grounds at British Columbia Vocational School, Nelson:		
Holland Landscapers Ltd.	23,240.00	Awarded.
Maintenance of Grounds at British Columbia Vocational School, Kelowna:		
Holland Landscapers Ltd.	18,620.00	Awarded.
Tomiye Enterprises Ltd.	42,316.00	
Maintenance of Grounds at British Columbia Vocational School, Nanaimo:		
Jensen & Johnson Landscape Contractors Ltd.	17,360.00	Awarded.
Maintenance of Grounds at Prince George Vocational School and Courthouse:		
Holland Landscapers Ltd.	15,400.00	Awarded.
Maintenance of Grounds of Provincial Government Properties at British Columbia Vocational School, Burnaby, and British Columbia Institute of Technology, Burnaby:		
Holland Landscapers Ltd.	7,588.00	Awarded.
Jensen & Johnson Landscape Contractors Ltd.	15,232.00	
Janitorial Services, British Columbia Vocational School, Burnaby:		
Ulf Dehn (Best Cleaners & Contractors)	36,960.00	
Excelsior Building Maintenance Ltd.	36,624.00	
National Building Maintenance Ltd.	28,800.00	Awarded.
Allco Institution, Dormitories Nos. 2 and 3, Haney:		
E. H. Shockley & Son	271,985.00	
Allan & Viner Construction Ltd.	311,100.00	
Kemeth Construction Ltd.	276,800.00	
Norwood Construction Ltd.	276,485.00	
Hall Construction Ltd.	264,988.00	Awarded.
Frank Stanzl Construction Ltd.	276,790.00	
Narod Construction Ltd.	273,463.00	
Doyle Construction Co. Ltd.	275,433.00	
Landscaping at Provincial Government Building, Oliver:		Not awarded.
Jensen & Johnson Landscape Contractors Ltd.	28,266.00	
Weigh-scale Station, Prince George:		
Dezell Construction Co. Ltd.	19,960.00	Awarded.
Alterations, Buildings Nos. 5 and 7, British Columbia Vocational School, Burnaby:		Not awarded.
Kennett Construction Co. Ltd.	55,680.00	
Allan & Viner Construction Ltd.	59,760.00	
E. H. Shockley & Son Ltd.	56,532.00	
Cain Truscott Contractors Ltd.	57,000.00	
Shopland Construction Co. Ltd.	57,824.00	
Maintenance of Grounds, Provincial Government Properties at Courthouse and Adjacent Offices, Prince Rupert:		
Holland Landscapers Ltd. (lawns, 15 cents per square yard; plants, 22 cents per square yard)	.....	Awarded.
Jensen & Johnson Landscape Contractors Ltd. (lawns, 6 cents per square yard; plants, 50c per square yard)	.....	

TENDERS RECEIVED AND CONTRACTS AWARDED—*Continued*

Description of Work and Names of Tenderers	Amount	Remarks
Alterations to 944 Howe Street, Vancouver:		
Gadicke Construction Co. Ltd.	$21,402.00	
Turnbull & Gale Construction Co. Ltd.	23,183.00	
David Mitchell Co. Ltd.	16,950.00	Awarded.
Alterations to 800 Cassiar Street, Vancouver:		
Gadicke Construction Co. Ltd.	37,970.00	Awarded.
Pacific Western Contractors Ltd.	41,878.00	
Lickley Johnson Palmer Contruction Ltd.	40,423.00	
David Mitchell Co. Ltd.	44,450.00	
Kootenay Trout Hatchery, Bull River (Phase 2):		
E. H. Shockley & Son	1,340,431.00	Awarded.
Burns & Dutton Contsruction (1962) Ltd.	1,347,500.00	
Marpole Construction Co. Ltd.	1,357,059.00	
Sorenson Construction Co. Ltd.	1,372,000.00	
Bennett & White Construction Co. Ltd.	1,366,875.00	
Provincial Government Offices, Ganges:		
Walter Cabott Construction Ltd.	276,950.00	
E. J. Hunter & Sons Ltd.	247,412.00	Awarded.
G. H. Wheaton Ltd.	251,626.00	
Narod Construction Ltd.	268,186.00	
Hillside Building, Essondale:		
Kennett Construction Ltd.	256,800.00	
Hodgson, King & Marble Ltd.	251,606.00	
C. J. Oliver Ltd.	249,900.00	
Western Building Ltd.	241,296.00	Awarded.
Hall Construction Ltd.	248,306.00	
Bennett & White Construction Co. Ltd.	249,892.00	
Sorenson Construction Co. Ltd.	247,900.00	
Erskine Construction Ltd.	242,647.00	
Janitorial Service, Victoria Law Courts, Victoria:		
Canadian Building Maintenance Co. Ltd.	62,302.80	
National Building Maintenance Ltd.	50,400.00	Awarded.
Best Cleaners & Contractors Ltd.	58,608.00	
Modern Building Cleaning Services of Canada Ltd.	65,736.00	
Excelsior Building Maintenance Ltd.	70,056.00	
Government Office Building, Fort Nelson:		
Poole Construction Ltd.	301,850.00	
Teck Construction Ltd.	377,434.00	
Norman Nilsen Construction Ltd.	299,777.00	Awarded.
Solar Construction Co. Ltd.	319,000.00	
Dyke Construction Ltd.	368,820.00	
Landscape Development, Jericho School, Vancouver:		
Holland Landscapers Ltd.	94,848.82	
Conniston Construction Co. Ltd.	74,649.00	Awarded.
Spra-Mac Landscaping Ltd.	92,276.00	
Jensen & Johnson Landscape Contractors Ltd.	119,299.00	
Bert Murray Landscaping Ltd.	85,100.00	
Emergency Health Service and Emergency Welfare Service Storage Building, Abbotsford:		Not awarded.
George Born Construction Co. Ltd.	28,435.00	
R. A. Adair Construction Ltd.	24,852.00	
Royal City Construction Co. Ltd.	22,712.00	
Croisdale Construction Ltd.	22,733.00	
Lickley Johnson Palmer Construction Co. Ltd.	24,123.00	
Pine Tree Construction Co. Ltd.	23,543.04	
Brockbank & Hemingway Ltd.	22,868.00	
Addition to Men's Gaol, Prince George:		Not awarded.
Smith Bros. & Wilson Ltd.	963,578.00	
Burns & Dutton Construction (1962) Ltd.	966,500.00	
Narod Construction Ltd.	979,627.00	
Poole Construction Ltd.	954,900.00	
Sorenson Construction Co. Ltd.	887,423.00	
Provincial Government Office Building, Duncan (Phase 1):		
E. J. Hunter & Sons Ltd.	68,979.00	
D. Robinson Construction Ltd.	75,231.00	
Luney Bros. & Hamilton Ltd.	66,735.00	Awarded.

TENDERS RECEIVED AND CONTRACTS AWARDED—*Continued*

Description of Work and Names of Tenderers	Amount	Remarks
Day Room Addition, Pearson Hospital, Vancouver:		
Hodgson, King & Marble Ltd.	$259,952.00	
E. H. Shockley & Son Ltd.	255,844.00	
Western Building Ltd.	256,522.00	
Hall Construction Ltd.	250,740.00	
Brockbank & Hemingway Ltd.	250,000.00	Awarded.
Janitorial Service, College of Education, University of British Columbia, Vancouver:		
Excelsior Building Maintenance Ltd.	47,750.00	
John Christianson and Helge Jensen	58,800.00	
National Building Maintenance Ltd.	47,220.00	
Best Cleaners & Contractors Ltd.	44,868.00	Awarded.
Landscape Development, Animal Pathology Laboratory, Abbotsford:		
Jensen & Johnson Landscape Contractors Ltd.	23,700.00	
Bro-Cro Nurseries Ltd.	19,337.00	Awarded.
Holland Landscapers Ltd.	36,828.00	
Spray-Mac Landscaping Ltd.	47,812.00	
Janitorial Service, Windermere Building, Victoria:		
National Building Maintenance Ltd.	16,440.00	Awarded.
Excelsior Building Maintenance Ltd.	21,528.00	
Canadian Building Maintenance Ltd.	22,704.00	
Best Cleaners & Contractors Ltd.	23,352.00	
Modern Building Cleaning Services of Canada Ltd.	18,205.20	

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