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EDITORIAL COMMENT.

We offer no apologies to our readers for the space we have devoted this issue to the reproduction of a large proportion of the competitive designs for the new Parliament Houses in Wellington. The interest has been so great throughout New Zealand in this competition, which is unique in the Country's history, that we feel we should do something to place on record some of the efforts of the competitors, which, thanks to their assistance, we are able to do.

We do not think that the importance of this competition has been sufficiently realised. It is for the first building in the country—the home of our Parliament, and it is of the greatest importance that the highest skill available should be obtained in the designing and carrying out of the subsequent building. In such a building there are two essentials which should be embodied at all costs, viz.: It should fulfil the purpose for which it is intended, and be expressive of that high purpose, and it should be a fine building from an architectural point of view. When we reflect that it is proposed to erect a building which is to be the home of our National Legislature for, say the next century, and when we consider that the building cannot fail to exert an influence for good or ill, we will realise that we cannot afford to run any risk of making a mistake by erecting a building which the next generation would want to sweep away. It will be generally conceded that the average persons knows very little about the art of architecture, nevertheless we are convinced that a fine building will have an influence for good on all those who come within its walls, as well as for that vastly greater number who behold it from without.

A grant has been made for building a National Gallery of Art in New Zealand; that is, a gallery for the permanent exhibition of pictures and other works of Art. Here in our proposed new Parliament Buildings we have an opportunity indeed of building a National Gallery, a gallery which will be of a hundredfold more value than any collection of pictures. For pictures are not the beginning and end of art. Galleries are unexplored by the vast majority of people. Pictures remain hanging on the walls, and books are hid away on the shelves, but our buildings are ever before the eyes of all men on their daily walks. On these grounds, therefore, we should make it our sacred duty to use every endeavour to erect a building worthy of our country, a building which will be a source of inspiration and beauty to us and to the generations to come, and which we can hand down to those who come after us with pride as a fine example of the noblest of the arts.

So many different opinions have been expressed with regard to this competition, and so much disapproval at the assessor's award, that we feel we should place a few of them before our readers.

To begin with. A certain set of conditions was drawn up and sent to all competitors at the outset. (They are printed elsewhere in this issue.) Competitors' designs were to be judged by those conditions. As soon as they were published, it was seen that the question of getting the accommodation asked for and at the same time putting up a building that would be a credit to this country in the future, was very problematic for the money. A large number of competitors made an honest attempt to erect a suitable building for the money, but a larger number evidently concluded that provided the erection of the first Schedule (section A) could be carried out for the £110,000 stipulated, no amount was mentioned for the completion of the building. And so we have two sections of competitors, i.e., those who endeavoured to adhere to the conditions, and those who practically ignored them, and sent in designs which, while providing for the accommodation asked for, ignore the question of cost entirely.

There is a great deal to be said for the latter, as we believe the best and most artistic results are obtained when the artist has free play. But why send in plans that are to be judged by a certain set of conditions, entirely ignoring those conditions. And what is to be said when an award is made on this basis, as appears to have been the case in this instance?

Again, there is the question of boundary. Some of the prize winners have not adhered to the conditions. Can this be considered fair treatment? Is it right that competitors should be put to the expense of drawing elaborate plans at great expense in time and money, and then find themselves in this position? The responsibility of assessing the prizes for this competition lay with one man. His time was admittedly short—just 3 weeks—and one wonders how any man could possibly scrutinize carefully the 300 odd drawings of the 33 competitors in this short period. To conscientiously do this would tax the strength of the most robust man.

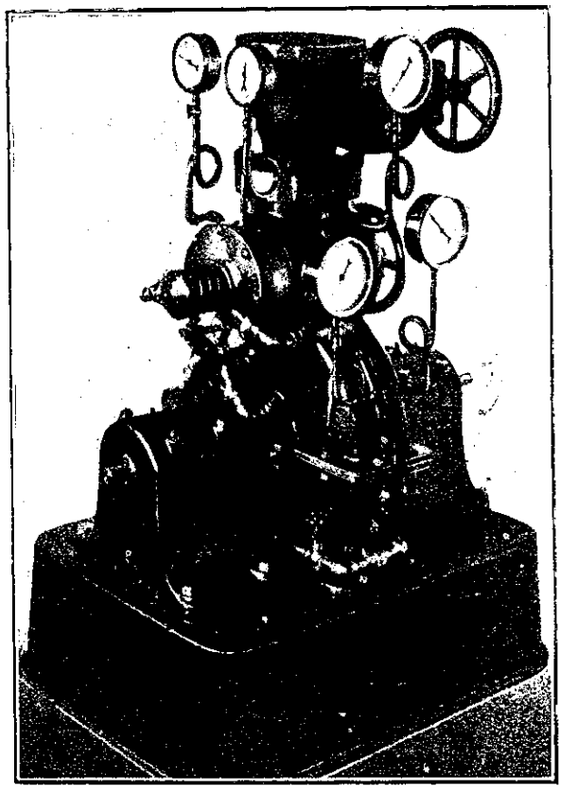
Would it not have been much better to have sent the whole of the plans away to England, after having first adopted the conditions drawn up by the N.Z.I.A., which are based upon those issued by the R.I.B.A., to be judged by a member nominated by the Royal Institute of British Architects? There could have been no question then of any but fair treatment.

Engineering

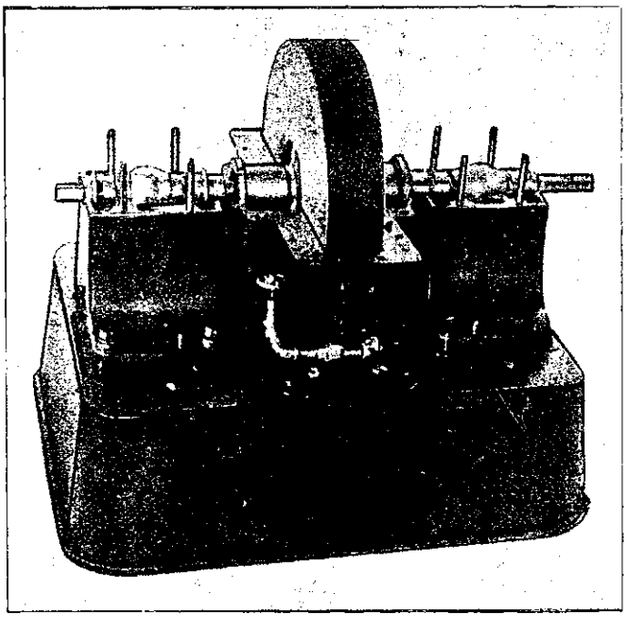
The Latest Steam Turbine.

Tesla's New Rotary Machine.

A machine based on a new principle, for use wherever a fluid is used as a vehicle of energy, has been invented by Nikola Tesla, whose reputation must, naturally, stand upon the contributions he made to electrical engineering when the art was yet in its comparative infancy. He is by training and choice a mechanical engineer, with a strong leaning to that branch of it which is covered by the term "steam engineering." For several years past he has devoted much of his attention to improvements in thermo-dynamic conversion, and the result of his theories and practical experiments is to be found in an entirely new form of prime movers shown in operation at the Waterside station of the New York Edison Company, who kindly placed the facilities of their great plant at his disposal for carrying on experimental work.



TESLA'S NEW 200 H.P. HIGH PRESSURE TURBINE.



TURBINE WITH UPPER HALF OF CASING REMOVED.

This Turbine, whose rotor consists simply of a set of flat disks 18ins. in diameter, develops 200 brake horse-power on test.

This remarkable machine is apparently capable of a wide variety of applications, from cases where velocity is to be imparted to the fluid, as in a pump, to those where the moving fluid is itself to operate machinery, either by its velocity alone or by its expansion. The fluid may be liquid or gaseous, and its velocity may be due to simple hydrostatic or gaseous pressure or to explosive combustion. Here, then, we have evidently a device capable of use wherever engines, turbines, pumps, or power-transformers of any kind are now in use. The new principle consists simply in the utilisation of the fluid's internal friction and its adhesion to a smooth surface for giving it speed or imparting to machinery its speed already acquired. This operation is thus vastly smoother than in any known pump or engine, and wasteful and injurious jerks are eliminated, as well as complicated parts. The new invention, which is in practical operation at the Edison Company's waterside station in New York, was briefly described by Mr. Tesla before the National Electric Light Association last May, and an authoritative description is now published by "The Electrical Review and Western Electrician (Chicago, September 9). Says Mr. Tesla:

"In the practical application of mechanical power based on the use of a fluid as vehicle of energy it has been demonstrated that, in order to attain the highest economy, the changes in velocity and direction of movement of the fluid should be as gradual as possible. In the present forms of such apparatus, more or less sudden changes, shocks, and vibrations are unavoidable. Besides, the employment of the usual devices for imparting to, or deriving energy from a fluid, as pistons, paddles, vanes, and blades, necessarily introduces numerous defects and limitations and adds to the complication, cost of production, and maintenance of the machine.

"The purpose of the invention is to overcome these deficiencies and to effect the transmission and transformation of mechanical energy through the agency of fluids in a more perfect manner, and by means simpler and more economical than those heretofore employed.

"This is accomplished by causing the propelled or propelling fluid to move in natural paths or stream-lines of least resistance, free from constraint and disturbance such as occasioned by vanes or kindred devices, and to change its velocity and direction of movement by imperceptible degrees, thus avoiding the losses due to sudden variations while the fluid is receiving or imparting energy.

"It is well known that a fluid possesses, among others, two salient properties: adhesion and viscosity. Owing to these a body propelled through such a medium encounters a peculiar impediment known as 'lateral,' or 'skin resistance,' which is twofold: one arising from the shock of the fluid against the asperities of the solid substance, the other from internal forces opposing molecular separation. As an inevitable consequence a certain amount of the fluid is dragged along by the moving body. Conversely, if the body be placed in a fluid in motion, for the same reasons, it is impelled in the direction of movement. The accompanying drawings illustrate operative and efficient embodiments of the idea."

"The operation above described is reversible, for if water or air under pressure be admitted to the opening the runner is set in rotation in the direction of the dotted arrow by reason of the peculiar properties of the fluid which,

travelling in a spiral path and with continuously diminishing velocity, reaches the orifices through which it is discharged. If the runner be allowed to turn freely, in nearly frictionless bearings, its rim will attain a speed closely approximating the maximum of that of the fluid in the volute channel and the spiral path of the particles will be comparatively long, consisting of many almost circular turns. If the load is put on and the runner slowed down the motion of the fluid is retarded, the turns are reduced, and the path is shortened."

If steam be admitted, the machine will work like an engine under expansion, but if the expansion be allowed to take place before admission, it will operate like a turbine, being driven by the impact of the rapidly-moving particles. Says the inventor:—

"The above description of the operation is suggested by experience and observation and is advanced merely for the purpose of explanation. The undeniable fact is that the machine does operate, both expansively and impulsively.

"When the expansion in the nozzle is complete, or nearly so, the fluid pressure in the peripheral clearance space is small, as the nozzle is made less divergent and its section enlarged, the pressure rises, finally approximating that of the supply. But the transition from purely impulsive to expansive action may not be continuous throughout, on account of critical states and conditions, and comparatively great variations of pressure may be caused by small changes of nozzle velocity.

"In the preceding, it has been assumed that the pressure of supply is constant or continuous, but it will be understood that the operation will be, essentially, the same if the pressure be fluctuating or intermittent, as that due to explosions occurring in more or less rapid succession."

One of the special advantages claimed by the inventor for his device is its ease and simplicity of reversal, which may be effected simply by turning a valve. He says in conclusion:—

"It is simple, light, and compact, subject to but little wear, cheap, and exceptionally easy to manufacture, as small clearance and accurate milling work are not essential to good performance. In operation it is reliable, there being no valves, sliding contacts, or troublesome vanes. It is almost free of windage, largely independent of nozzle-efficiency, and suitable for high as well as for low fluid velocities and speeds of revolution. The principles of construction and operation are capable of embodiment in machines of the most widely different forms, and adapted for the greatest variety of purposes."

The mechanically perfect turbine would be one which combined simplicity and cheapness of construction, durability, ease and rapidity of repairs, and a small ratio of weight and space occupied to the power delivered on the shaft. Mr. Tesla maintains that in the turbine which forms the subject of this article, he has carried the steam and gas motor a long step forward toward the maximum attainable efficiency, both theoretical and mechanical. That these claims are well founded is shown by the fact that in the plant at the Edison station, he is securing an output of 200 horse-power from a single-stage steam turbine with atmospheric exhaust weighing less than 2 pounds per horse-power, which is contained within a space measuring 2 feet by 3 feet, by 2 feet in height, and which accomplishes these results with a thermal fall of only 130 B.T.U., that is, about one-third of the total drop available. Furthermore, considered from the mechanical standpoint, the turbine is astonishingly simple and economical in construction, and by the very nature of its construction, should prove to possess such a durability and freedom from wear and breakdown as to place it, in these respects, far in advance of any type of steam or gas motor of the present day.

Technical and Chemical Notes.

FROM OUR SPECIAL CORRESPONDENT.

New Inventions in Dyes and Paints.

A chemical firm in Germany recently succeeded in manufacturing a dye of an intensive yellow. It is obtained by heating up indigo with aromatic acid-halogenides with the aid of condensation agents, such as metals or metallic salts. There is a great future for the new yellow dye, as may be gathered from the following facts. The War Departments of all countries of the world are trying to find a suitable colour for new army uniforms. It is essential that these colours be fast. Dyes produced in the copper are much more durable than those made in the old way. It has, however, been impossible to obtain all shades of colours produced in the copper, since a pure yellow has been wanting. The new indigo yellow may be used with all other copper colours, hence being of untold importance in the dyeing of woollen goods. With its aid every shade of khaki, field-gray and field-green may be obtained. Any imaginable nuance may also be imparted to silk; at the same time the colours are faster than any yet produced. The new dye is also destined to play a leading part in silk weaving, since the copper dye may be subjected to precisely the same boiling as the silk.

Caseine colours are used in painting pictures, and also for wall paintings ("sgraffito painting"). Caseine paintings are not affected by time, and their colours possess considerable charm, fire and depth. They often have been done in the form of mural paintings in public buildings, churches, town halls, etc. Caseine preparations may be used to advantage as impregnating agents for rendering painting surfaces firm. There are other specialties in paints in the form of mineral colours, which are guaranteed to be acidproof, free from lead, and heat proof. Also, being rust and weather-proof, they may be used for painting bridges, gas tanks, corrugated iron structures, etc. One of the new paints, called "Preolit," stone protector, is a solution to keep stone from decomposing and to render cement floors dustless. "Kautscholeum" is the name of a permanent paint for indoor or outdoor use. It replaces oil paints and may be adopted for painting buildings, to protect them from pouring rains. "Vitralin" is a brilliant colour for interior and exterior painting. Being germicidal, it is particularly of use in painting stables, butcher shops, hospitals, etc. To produce a durable brilliant green patina very quickly on copper roofs, steeples, etc., one should employ "Mathalit," which costs 10/- a liter, this being sufficient to cover 100 sq. yards.

Finishes are employed in the textile industry to give thread or finished fabric an appearance conforming to the demands of fashion. By using certain finishes, it is possible to impart to cotton material the character of linen; satin texture furnished with satin dressing is a good imitation of silk. Finishes also play an important part in the manufacture of woollen, half-woollen and worsted goods. Their composition depends on the nature of the material. Starch paste, dextrin, glue, soap, wax, kaolin, stearin, soda, gelatine, etc., are used in preparing the finishes, glycerine as a rule being added. Glycerine is a leading article of trade, and is subject to much speculation. The price of the refined product varies according to the quality, between £5 and £7 per 100 kilograms (2cwt.). Efforts, therefore, have been made to find a substitute for glycerine, for use in making the finish. And it may safely be said that there are excellent substitutes to be had at the present time. I will mention the products sold under the names of "Glycerocollo" and "Glycerine Substitute," which are much in demand.

There have been several kinds of dry plaster in the market for some time. They are to be had in all colours, and are used principally for making plaster for the fronts of buildings. Dry plaster is a mixture of pulverised slaked lime and a diluting agent, which is reduced to a plastic mass with water. It may be used as plaster if applied immediately, as it rapidly hardens. The lime must be slaked and ground up very carefully for producing a good plaster. Dry plaster may be stored for a long time without losing any of its binding power or depreciating in quality. When applied to walls, it is weather-proof, and may be cleaned by washing with water, soap-water, or diluted acids. The plaster may be obtained in various grains, different ones of which are to be preferred for smooth or fluted plaster. The press plaster process is an innovation in this field, the plaster being provided with relief designs, with stamps. If large surfaces are to be plastered, it is a new method to do the work pneumatically. The plant is portable, its principal parts being a pump forcing the plaster through a flexible tube at the end of which there is a nozzle. The plaster is blown out of the nozzle on to the wall like a rain of mud.

* * *

A Substitute for Platinum.

Last year the price of platinum increased above £50 a kilogramme, so that it now amounts to almost £300. This is due to no new deposits of it having been discovered. It is found in the Ural Mountains and the Caucasus, in California, Australia and Sumatra. A second reason for its high price is that it is being turned to many uses. The chemical, incandescent lamp, motor car, and jewellery

industry, and dentistry, make use of large quantities. Vessels of platinum are employed for chemical purposes, owing to their withstanding high temperatures and to their being highly insensible to chemicals. Bowls and crucibles for the same purpose have recently been made of 10 parts platinum and 90 parts gold, thereby considerably reducing their cost. These vessels can stand a temperature of 1000 degrees Celsins, and are almost as durable as pure platinum vessels. There is a slight shimmer of gold about them, otherwise they look exactly like platinum. A firm in Hanau, Bavaria, has begun the manufacture of these vessels.

* * *

Electric Heating and Cooking.

The application of electric cooking and heating apparatus for household purposes still meets with considerable opposition, in spite of the fact that it has been demonstrated that electricity is highly economical and the apparatus thoroughly stable and able to withstand hard tests for many years. If the kilowatt hour of electricity is reckoned at 1¼d., it is cheaper to work with it than with gas at the rate of 1½d. per cubic meter. There are also other advantages to be considered: its readiness for immediate use, the absence of fuel and waste gases, the security against fire, and exact regulation of the cooking, with low consumption of power. Undoubtedly considerable progress will be made in the near future in the introduction of electric heating and cooking apparatus, since several leading firms of the electrotechnical branch have been reported as about to begin the manufacture of solid apparatus at a low price. Electric heating and cooking has been used for several years in industry and the crafts, and are continually becoming more popular. The latest form of application is the electrically heated baking oven, suitable for use in the country and on vessels. It may be employed for any kind of pastry, and is far superior to ovens heated with wood, as regards cleanliness and practicability. The firm constructing the ovens have a model bakery at work, which may be inspected if desired. Electrically heated water distilling apparatus for producing pure water, are of importance to pharmacies, laboratories and electricity works (storage batteries). Electric heating carpets for warming floors are a further innovation.

* * *

Use of Electro-Magnets.

The electro-magnet is being used more and more in machine construction. Lifting magnets are employed for loading rails and pig iron, electro-magnets for fixing machine parts on the face plate of a lathe. Electro-magnetism has been adopted for another purpose, in the form of a magnet gripper with a handle on the side two feet long. This is a kind of common hand magnet and is used for lifting up small objects hard to grip with a pair of tongs. The apparatus is water and fire-proof, so that it may be used for taking hot pieces of iron or steel from the annealing or tempering furnace and dipping them into an oil or water bath. It may also be employed for putting iron and steel pieces into and taking them from, galvanic baths. These magnetic grippers are constructed for direct currents of 3 to 220 volts, and may be connected directly to any light or power conduit. Their weight is about 4½lbs., and their bearing force up to 22lb. As a rule, a conduit of 9 feet long with a connection plug are supplied with them, the button switch is on the gripper. For high voltages a resistance must be used.

Notes on Electric Traction.

BY W. M. NELSON.

The history of electric traction, though interesting and instructive to the student of engineering, scarcely falls within the scope of these notes. It may not be out of place, however, to briefly sketch a rough outline by way of introduction. The use of history is to give mental perspective, and a knowledge of industrial history should find a place in the mental equipment of every engineer.

The discovery of electromagnetic induction in 1831 by the immortal Faraday opened up a vast field for invention and industrial development. It established a connection between mechanical power (i.e., force multiplied by velocity) and electrical power (electro-motive force multiplied by current) and the most far-reaching result was the invention of the dynamo, a machine for converting mechanical power into electrical power. Owing chiefly to constructional difficulties and the inferior materials available at that time, the development of the dynamo was comparatively slow, and it was not till 1850 that the reversibility of its action was realised and the electric motor, of the type in general use to-day, came into being. One of its first applications was the propulsion of a small boat on the Thames, followed by numerous attempts to propel road vehicles by electric power. The early electric motor was, however, a very primitive contrivance, and the path of the pioneer traction engineer of that day was thorny indeed. Not only were the motors in the highest degree unreliable and unmanageable, but as the only source of power available was the primary battery, this was another source of trouble, which alone was sufficient to preclude success.

It is not surprising, therefore, that half a century elapsed after Faraday's discovery of the fundamental principle before electric traction began to emerge from the purely experimental stage. In 1881 the first commercial electric tramway was opened to the public at Lichterfield, in Germany, followed in 1883 by a similar enterprise at Portrush, in Ireland, in which, by the way, the third rail method of distribution was used for the first time. American inventors then took up the problem with characteristic energy and recklessness. The primary battery having been finally abandoned as a source of power, various methods of distribution and collection were tried and discarded in turn; and the overhead trolley, now in general use, made its first public appearance in Toronto in 1885.

The next stage in the history of electric traction was the development of a satisfactory traction motor, method of drive and method of control. The power required to accelerate a light car even up to a very moderate speed is very much greater than one is led to estimate from the fact that two horses only were used for horse car service. This is partly explained by the fact that the momentary overload capacity of the horse is enormous, and it is not to be wondered at that the traction engineers of that time seriously under-rated the amount of power required. Indeed, it took them some time to recognise this as one of the causes of repeated motor failures, and then the greatest difficulty was experienced in designing motors of sufficient power of suitable dimensions for the space available, and hardy enough to withstand the severe working conditions to which traction motors are subjected, even when carefully handled. Innumerable constructional defects had to be eliminated by a tedious trial and error process before the traction motor could make any pretence at reliability. The necessity for a flexible drive, protection from dust and moisture without impeding ventilation, and commutator troubles due principally to the use of copper brushes, may be mentioned as examples of the numerous difficulties which beset the pioneers. The trials and tribulations experienced by the promoters of early commercial traction schemes and the subterfuges to which they had to resort in order to maintain the confidence of the public who controlled the purse strings make humorous reading. In America they found a virgin field for their enterprise almost entirely unhampered by the vested interests, legislative restrictions and old-world prejudices which stayed the tide of progress in Great Britain for many years. The trolley wire was particularly objected to on the score of unsightliness and danger to the public—both very much exaggerated. Even so late as 1898 the fair city of Edinburgh, recognising the need for transport facilities, but anxious to preserve her good looks, tabooed the trolley and lavished money on cable tramways, afterwards converted at further expense to the electric conduit system. The city of Glasgow, on the other hand, making no pretence at beauty, adopted the overhead trolley in 1900 without hesitation and immediately made a splendid commercial success of her tramway system. At the present time the overhead trolley system is in use in 95 per cent. of the tramway systems in Great Britain, the underground electric conduit system being employed in two cases and the surface contact system also in two cases. In America the trolley is practically universal, though the conduit system has been used in one or two exceptional cases. On the continent of Europe the overhead system is in general use, but the trolley is in many instances replaced by the Siemen's sliding bow.

To be continued.

Volcano Ash in Cement.

For some time past a company in Japan has been engaged in exploiting the use of volcano ash in combination with Portland cement mortar. This combination is said to be particularly valuable in the construction of works submerged in salt water. It is claimed that the cement thus formed possesses greater tensile strength, and is denser, than ordinary Portland cement. It is also more resistant to the percolation of water.

Motoring and Aviation

Effects of Recent Transport Strikes.

OUR ENGLISH CORRESPONDENT.

Colonial readers are, by now, well aware that the Old Country has been undergoing the inconvenience incidental on the recent strike of railway and general transport workers. So completely have the usual means of transit been disorganised that the public generally have been at their wits' end how to transact their accustomed business.

One of the immediate results of these strikes has been that the demand for commercial motor vehicles has increased immensely. It is an ill wind that blows nobody any good, and in this case it is the motor manufacturer who has profited by the misfortunes of others. From all over the country commercial vehicle orders have been pouring in, and the demand is, already, far in excess of the supply. One firm, I am informed, has received orders which will keep their present plant fully occupied for at least three years.

The strike has demonstrated to wholesale firms and to cartage contractors that it is vitally necessary for them to have autonomy in the matter of delivering goods. The cessation of the railways has been the means of compelling them to overcome whatever fears they may have had as to the potentialities and of the value of motor traction. In other words, they have been literally "pitchforked" into buying commercial motors for their own use. The result is that the "Trade" has received a stimulus which is likely to put it in a position which it might not otherwise have occupied for many years to come.

In this item of news there lies a moral. It behoves the New Zealand business man to put aside that futile habit of attempting to compute on paper the relative merits of horse and motor traction; and to do more than merely "flirt" with the latter. Let him believe the sound truth that the modern commercial motor is an economical and reliable article, and is, in fact, something more than the potential successor to the horse. It has "made good" in the face of extreme odds. He who takes it up now runs little risk of making a bad investment—always provided he chooses the right type of vehicle and one eminently suited for his specific service.

A Glut of Old Cars.

In a wayside inn in the Midlands of England, I met a dealer, a few weeks ago, who made a specialty of second-hand cars. He was a Londoner in a big way of business, and he told me a doleful tale of the difficulty, nay, the impossibility of getting rid of old pattern cars of high horse-power. The sale of such cars has practically ceased, and London garages are so full of them that dealers are forced to ask rent for their storage.

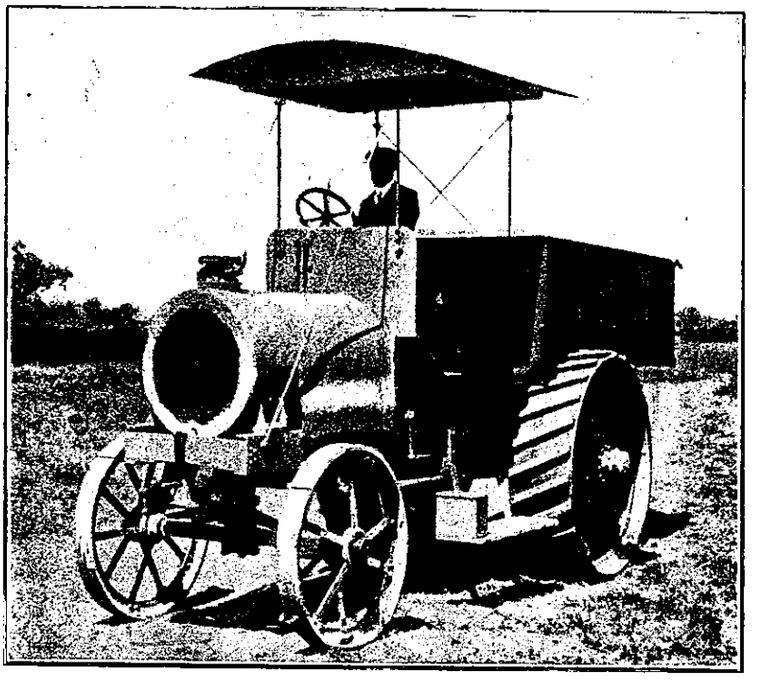
As a rule, the dealer in second-hand cars is quite prepared to store them free of charge, in the expectation of being repaid by his commission on the sale; but the market for old cars of forty horse-power and over has become so restricted that even a liberal commission off the sale price would not pay the storage charges for a fortnight.

It is not altogether due to the fact that the popular demand of the moment is for a car of moderate horse-power. There is still a big field for high-powered motor cars among that class to whom expense is no object, and who must have a limousine bodied vehicle, irrespective of the price. Indeed, the manufacturers who have confined themselves to the production of cars of this class, as for instance, the Rolls Royce Co., have not been able to keep pace with their orders.

But between the forty and sixty horse-power car of to-day and its prototype of a few years ago there is an immense difference. The modern car gives "all" the power it is rated at, but not so the older car, with its short stroke and big bore.

This, at first sight, would hardly seem justification for the extraordinarily depreciated value of the big and old car. But when it is explained that the benign Government imposes a yearly tax on cars which is computed on the bore of the engines alone, it will soon be realised why these vehicles are now almost "two a penny." These license duties are graduated, and increase rapidly as horse-power (i.e., bore) increases. So heavy is this burden that it has practically stopped the sale of the 40/50 h.p. car of a few years' antiquity.

The Chancellor of the Exchequer has come in for a fine lot of abuse on account of the inequity of his motor taxation scheme, and it is on the tapis that we may soon expect a complete revision of the scale and basis of the duties. A good suggestion—much mooted just now—is that cars themselves should not be taxed, but that the duty on the petrol they consumed, which is at present 3d. on the gallon, should be increased a certain amount. This would result in making the car user, not the car owner, pay the piper.



30 H.P. AGRICULTURAL MOTOR, "DAIMLER."

Glorified Chauffeurs.

A writer in a new work on aviation asserts that most of the present day flying men are only "glorified chauffeurs." The only pity, to my mind, is that they might faithfully answer to this description, for it is in ignorance of their engines and of speed matters generally that most aviators fail. Many of our flying men are recruited from the ranks of the sons of wealthy men, and so the success of those who soar to the limelight is often due to naught else but the unseen preliminary work done on their machines by some, for the time being, unknown French mechanic. The great Vedrines was, eighteen months ago, the humble mechanic to the actor-airman, Lorraine. The latter made many good flights, but none can doubt that their successful issue was

due to Vedrines and Vedrines' skill as a mechanic.

A young man with an abundance of money and spare time can readily become an aviator nowadays. He will have the best machine; will have highly paid French mechanics to do all the delicate work of adjusting and overhauling engine and planes, so that his task is merely to pilot a super-excellent aeroplane.

It will benefit the sport and business of aviation greatly if the majority, and not the small minority, of aviators were "glorified chauffeurs," with a mechanical bent.

A Wright Wing-Flapping Machine.

Vague cabled reports state that the Wrights have built a new machine with flapping wings instead of usual screw propellers. It is well-known that the Wrights have been deeply engaged in the propeller problem for some time past. While not inclined to believe much success lies ahead of wing-flapping devices, it will be as well, pending more details, to give the Wrights credit for not being freakish investigators.

Nevertheless I cannot help thinking that the fact that steamships are kept in motion by means of screw propellers instead of big "fins" should serve to indicate that a parallel must exist for aerial locomotion.

A well-founded "Canard."

Considerable attention is being given by constructors to the marine aeroplane. In the happy French jargon, these machines are called "Canards," and the pretty wit of every scribe encourages the remark that "It is no canard that Mr. So-and-So is building a canard!"

The rumour that M. Bleriot has now completed his "duck" aeroplane indicates that developments in this directions are to be looked for. The Bleriot is a most extraordinary machine. In appearance it is like a stumpy monoplane seen in a distorting mirror. The "tail" is in front; the engine behind; and the pilot amidships. The main plain is well to the rear of the covered-in prow, which is deep and rises sharply.

The Bleriot is not merely an aeroplane with a few floats attached. It is a wholly new and special design for a specific purpose. It looks as if it would both swim and fly well. But one never can tell.

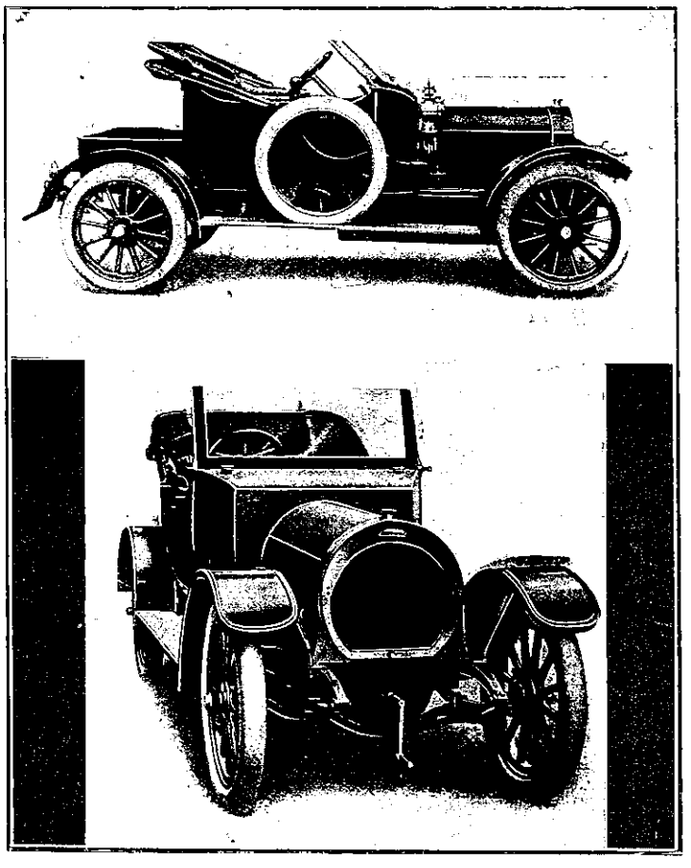
Retrospective.

How few motorcyclists ever give a thought to the countless inventions of which their machines represents a "tabloid" expression. There is hardly one amongst us who has any idea of the patient effort and tireless devotion to an ideal which actuated the pioneer investigator. To-day there must be over 250,000 motor cycles in use throughout the world. Twenty-five years ago there was but one extant. This machine was the progenitor of all motor cycles, and was the creation of the brain of the father of automobilism —Gottlier Daimler.

I have before me, as I write, an illustration of this archaism. Quaint it certainly is in appearance, yet many points of its design are retained on the modern mount. It had a long-stroke engine, with internal flywheels. Its exhaust valve possessed an angular seating, and was actuated from a camshaft. Its inlet valve was automatic in action. The engine was suspended vertically "amidships," and drove a round belt, running over grooved pulleys. This machine also possessed that 1911 innovation (*sic!*) a free engine handle-starting device.

From year to year the motor cycle has been undergoing more a process of refinement than one of revolutionary change. The immense store of knowledge gained during the past quarter century has been drawn on freely. The result is a single-track motor vehicle, possessing every refinement permitted by the dictates of advisability, and staunch enough to sustain a full effort by the hour, by the day, or by the year.

The inherent sentimentality of the motor cyclist should teach him that even a casual thought of the work of Daimler is but tribute due to a real benefactor.



"NEW PICK" CAR.

The "New Pick" Car.

The "New Pick" car, which is British built throughout, has an engine of the "Enbloc" type. The bore is 90 m.m., and the stroke 127 m.m.

The inlet and exhaust branch is ribbed, and is cast separately, being secured to the upper part of the cylinder casting by four studs, the four inlet ports in communication with the single flange to which the carburetter is attached being ingeniously cast about the exhaust gas passages, so that the ingoing gas is vaporised efficiently.

The valves are all arranged on the left-hand side of the engine, and large plates serve to cover the valve springs and tappets to the exclusion of dust from the wearing parts.

The cooling is arranged on the thermo-syphon principle, the radiator being of the vertical gilled tube type, a quantity of water being carried in the upper part forming a reservoir, the cooling being assisted by means of a belt-driven fan.

Ignition is by means of a Simms SU_4 type magneto, and is arranged on a bracket on the left hand side of the crank case.

The clutch is of the self-contained type, but in place of the usual leather covering to the cone, red fibre is employed, and this is found to take up its work in a very smooth manner.

The gear box contains three speeds, forward and reverse, the direct drive on top. The wheel base is 9ft.

The brakes on this car are exceptionally well carried out. The foot brake is of the contracting type, acting upon a drum behind the gear box, the hand brake being of the internal expanding type, taking effect on the wheel drums.

Long semi-elliptical springs are fitted on rear and front, with a transverse inverted semi-elliptical spring in addition anchored to the centre of the rearmost tubular cross-member of the pressed steel frame.

The front axle is of H section steel, the rear axle casing is strongly stayed and ribbed, the propeller shaft is enclosed and runs on ball bearings.

The general design and workmanship of the chassis and body is excellent. The New Pick Company claim it to be the best value in the world.

One great feature about the New Pick engine is the entreme quietness and absence of vibration on high speeds, which undoubtedly shows that great care has been taken in assembling the engine and in the balancing of the reciprocating parts.

The carburetter is of the well-known "Zenith" type, which is perhaps the most popular carburetter on the market to-day.

The wheels are very strong English Artillery, and the tires are first grade Dunlops.

The New Pick is a delightful car, and runs easily without jar. Mr. Mervyn Stevenson, of Hereford Street, Christchurch, will be glad to demonstrate to any interested person the truth of this and give any information required.

Architecture and Building

SELECTION OF COMPETITIVE DESIGNS FOR THE PROPOSED NEW PARLIAMENTARY BUILDINGS, WELLINGTON, N.Z.

To New Zealand Architects,—

The New Zealand Government invites designs for proposed New Parliament Buildings, Wellington, from architects residing within the Dominion. Members of the Civil Service shall not be debarred from competing.

Conditions of Competition and Instructions to Architects

Any officer in the Government service desirous of competing must prepare his designs entirely in his own time, at his own expense, and on his own premises, or at any rate not in the Government offices.

1. The design shall be for a building the first portion of which shall be erected on a site between the present temporary Parliament buildings (late Government House) and the old Parliament buildings partly destroyed by fire. Plans of the site showing the position of these buildings are available for competitors, together with the conditions, on application to the Public Works Department and on payment of £1, which will be returned to those sending in designs.

2. The building is to be designed so that a portion, comprising hereinafter described in Schedule A may be erected without preventing the continued use of the present buildings for the meeting of Parliament. On the completion of this first portion, which must provide temporary corridor connection with the two above-mentioned buildings at points marked A and B, the present wood temporary Parliament building may be removed, and the second portion of the new building proceeded with at a future date, completing the accommodation as set forth in Schedule B.

3. The cost of the first completed portion, including lighting, heating, ventilating, but excluding furniture such as desks and seats in the Legislative Chamber, shall not exceed £110,000.

4. The design of each competitor must be illustrated by a plan of each floor, sufficient sections (at least three) on such lines as may show best the general internal arrangements and design, and by at least four elevations of the complete building, all drawn to a scale of 8ft. equal to 1in. A block plan will be required to a scale of 16ft. to 1in., showing the existing buildings in relation to the portion of the new building which is first to be erected and showing the portion or portions to be erected subsequently; also showing approach roads; and lay out of the site with reduced levels indicated by figures in circles at various points all over the site. One sheet of details of a part of the external main facade drawn to a scale of ½in. equal to 1ft. Perspective drawings are optional, but same will not receive much consideration, and they must not be framed or glazed.

5. The drawings of the elevations and sections must be executed only with pen and ink without colour of any kind, excepting that a wash of colour may be applied on the plans and sections over the area of those portions of the building that are to be erected at a later date. The elevations only may have at shadows of a light monotone cast at an angle of 45 degrees with horizontal and vertical planes to indicate projecting parts. The door and window openings and roofs may have a flat pale wash of ink or of the monotone. The walls on plans and sections must be filled in with black Indian ink only. The names of the particular rooms, with their respective measuremets, to be clearly indicated on each room.

6. Drawings must be on sheets of plain paper without border, mounted on plain stretchers of one uniform size; not more than two drawings to be placed on each stretcher.

7. Each competitor must furnish, together with his plans, a typewritten report describing the building to be erected, stating the cubical contents from the floor of bottom storey to the wall-head, and adding the exact cubic contents of the roofs and tower, or towers (if any). The competitor must also give a comprehensive description of the materials proposed to be used, the method of construction, and the system of heating and ventilation; the estimated entire cost of the execution of the completed design; also the entire cost of the portion first to be erected must be mentioned in the report; the price per cubic foot at which the competitor has estimated the various portions of the building, such cost including heating, ventilation, electric light, and other works structural as well as mechanical, necessary to fit the building for the reception of furniture, and the efficient fulfilment of its purpose.

8. Each set of drawings and relative documents must be sent in anonymously, accompanied by a sealed envelope containing only the author's name and address, and a statement that the design is the author's own work, or was prepared by assistants working under his immediate supervision. When unpacked the contents will be marked for identification; but no distinguishing mark, motto, or device is to be put on the drawing, description, envelope, or case by the competing architects or their agents.

9. The designs must be sent in, carriage paid, addressed to the Hon. the Minister of Public Works, Wellington, on or before the 31st July, 1911. Each package must be marked "Design for Proposed Parliament Buildings."

10. Premiums as follows will be awarded for the four best designs: To the design placed first, £1000; to the design placed second, £500; to the design placed third, £300; and to the design placed fourth, £200; but no competitor shall be awarded more than one premium. Should any of the four best designs be the work of Civil Servants no premium will be awarded for such design (or designs), but in such case the Civil Servant concerned will be granted a bonus of an amount equal to the premium offered for such design.

11. A commission of 5 per cent. shall be paid to the author of the design awarded first place, provided his design is selected for execution and that he is appointed architect of the building, such commission to be calculated on the total cost of all the works designed, prepared for contract, and supervised by the architect. The commission shall include the preparation of working drawings, details and specifications in duplicate, the supervision of the work, travelling expenses, and all services usually rendered by architects. No commission or other fee shall be charged to or accepted from the contractor for supplying him with copies of the plans, etc., but such copies as may be necessary shall be furnished by the Department free of charge, as is usual in the case of Government contracts. The Government reserves the right to adopt or reject any of the designs for execution, to dispense with the architect's supervision, and to carry out the works under the supervision of its own officers, in which case only 2½ per cent. commission shall be paid the architect in full settlement for all services rendered in the preparation of working drawings, detail drawings, and specifications in duplicate, and for all services usually rendered by architects excepting only the supervision of the works. In the event of a design prepared by a Civil Servant being selected for execution no commission whatever will be paid.

12. The architect whose design is selected may be called upon to make any modification or alteration in his plans that the Government may desire before tenders are invited for carrying out the work, and any variation in the cost arising out of such modification or alteration shall be added to or deducted from his estimate, and the acceptance of such design shall be subject to a bona fide tender from a reliable contractor or contractors being obtained for carrying out the work within 10 per cent. of the estabilshed sum so arrived at.

13. Every care will be taken of the designs and drawings received, but the Government will not be liable for any damage that may occur to them while in their custody or in transit. The premiated designs will remain the property of the Government, but the others will be returned to their respective authors, carriage paid.

14. All the designs received in conformity with the conditions and instructions may be publicly exhibited after the award is made.

15. Competitors are left absolutely free as to architectural style; but the efficient lighting, heating, and ventilating of the interior of every part of the building will be considered of primary importance.

16. In planning the suites of rooms to be occupied by Ministers, Speakers, Leader of the Opposition, Clerks of Parliament, and other officials of the two Houses, it is recommended that they be placed as far as possible with a sunny aspect.

17. It is advisable that the Library should be planned so that as many books as practicable within the limits of cost shall be in one large hall, top-lighted, and having galleries round the walls with book-shelves. The object of this arrangement is to permit of easy supervision from a central office having glazed walls situated on the floor in the centre of the apartment. The Library should also be planned so that it will be possible to make future extensions.

18. The building must be designed so as to afford reasonable resistance to fire and earthquake shocks, and provision must be made for the use of materials best adapted for these conditions.

Schedule A of Accommodation to be provided in First Portion.

Apartments will be required for the House of Representatives, as follows:—1. Chamber to accommodate at least 100 members, to be surrounded by wide lobbies, having provision for book-shelves; desks, with drawers, to be shown for each member, arranged with seats as far as possible in pairs. 2. Galleries around the Chamber, as follows: (a) Public Gallery; (b) Speaker's Gallery; (c) Gallery for Members of the Legislative Council; (d) Ladies' Gallery; (e) Gallery for wives of Ministers, etc.; (f) Press Gallery, to seat about twenty persons in the front row (thirty inches of space to each), with further seats and desks in a back row, the desks to be twenty-one inches wide and to be provided each with a lock-up drawer and continuous narrow shelf under. This gallery to be entered as mentioned below. 3. A Press writing-room large enough to comfortably accommodate twenty correspondents at one time and fitted with at least twenty lockers for Bills and Papers; and access to the Press Gallery should, if possible, be through this room only and direct without intervening corridor. 4. A Press supper-room, about equal in size to the writing-room. 5. Speaker's rooms, as follows: (a) Office; (b) Sitting-room;

(c) Bedroom; (d) Bath-room, W.C., etc.; (e) Messenger's room. 6. Chairman of Committees: (a) Office; (b) Dressing-room. 7. Clerk: (a) Office; (b) Dressing-room, 8. Clerk Assistant: (a) Office; (b) Dressing-room. Serjeant-at-arms: (a) Office; (b) Dressing-room. 10. Second Clerk Assistant and Record Clerk. (a) One large office, and (b) room adjoining for Press to peruse papers. (5, 6, 7, 8, 9, 10 should be as close to the Chamber as possible.) 11. Bill and Paper Office: Large room near Chamber with Members' lockers inside in room and outside in lobby. 12. Reader (also Clerk of Bills and Papers): One room adjoining Bill and Paper Office. 13. Chief Messenger: (a) Office; (b) Stationery Store-room. 14. Messengers: (a) Large room (waiting) for twenty-five Messengers; (b) Large dressing-room. 15. Orderlies: Waiting-room for six near entrance. 16. Leader of Opposition: Large office (one room). 17. Government Whip's Office: One room. 18. Opposition Whip's Office: One room. 19. Ladies: (a) One room near Gallery; (b) One dressing-room, lavatory, and W.C. near Gallery; (c) One waiting-room near entrance. 20. Strangers. (a) Waiting-room near entrance. (b) Two waiting-rooms near Committee-rooms. 21. Interpreter: Office (one room). 22. Maoris: Large waiting-room with a separate outside entrance, and separate lavatory and W.C. accommodation. 23. Members' writing-rooms (four rooms). 24. Joint Committee rooms (two), about 25ft. by 18ft. 25. Committee-rooms (four), averaging about 24ft. by 16ft. 26. Chief of Hansard Staff (one room). 27. Hansard Staff: Large room. 28. Hansard Supervisor: One room 29. Assistants to Supervisor: One room. 30. Committee Reporters: One room. 31. Committee Clerks: Large room. 32. Typistes: One room. 33. Indexer to Hansard: One room 34. Store-room for charwomen and cupboards.

Apartments will be required for Legislative Council, as follows.

1. Chamber, with seating accommodation for not less than sixty members, on similar lines to that for the House of Representatives.. 2. Galleries around Chamber: (a) For Public; (b) Speaker's Gallery; (c) Ladies' Gallery; (d) Wives of Members; (e) Wives of Members of House of Representatives; (f) Hansard; (g) Press; (h) Gallery for Members of the House of Representatives. 3. Speaker's Rooms (two): (a) Office; (b) Private room. 4. Chairman of Committees: Office. 5. Clerk of Council: (a) Office; (b) Dressing-room. 6. Clerk Assistant: (a) Office; (b) Dressing-room. 7. Second Clerk Assistant and Extra Clerk: One large room. 8. Members' Rooms: (a) Sitting-room; (b) Smoking-room. 9. Waiting-rooms (two): (a) Gentlemen; (b) Ladies. 10. Messengers: One large room for five persons. 11. Private Bill Office: Conveniently placed common to both Houses and with an access from outside of the building as well as from within. It is desirable to have a small waiting-room in connection with this office. 12. Record-room (fireproof). 13. Messengers' dressing-room, divided into two by screen partition. 14. Hansard-room. 15. Stationery rooms and cupboards.

Ministers' Rooms, Members' Lobby, Etc.

1. Provision must be made for suites of rooms for, say, eight Ministers, each suite to consist of (a) a room at least 22ft. by 16ft.; (b) a secretary's room at least 16ft by 12ft.; (c) a waiting-room about 12ft. by 10ft.; and (d) a typists' room about 12ft. by 10ft. Messengers' rooms (two) convenient to the Ministers' rooms. 2. A cabinet-room about 30ft. by 20ft., with secretaires' rooms (two), each about 16ft. by 12ft., and a large typists' room for four persons, and a waiting room to be used also as a messengers' room. 3. A spacious lounge-lobby common and convenient to both Houses must be provided, which shall be heated by two large fireplaces in addition to any other means of heating. 4. A room about 20ft. by 15ft., to be used as post and telegraph office, to be provided convenient to the lounge-lobby and entrance hall. The necessary lavatory and w.c. accommodation to be provided; also eight baths with hot and cold water for the use of members.

Schedule B of Accommodation to be provided in Future Extension.

Apartments will be required for Bellamy's, as follows:—1. Dining-room, to seat 200. 2. Bar room, with counter (not in dining-room). 3. Room for officer in charge. 4. Room for Clerk. 5. Pantry and serving-room (one large room). 6. Dry store-room. 7. Strong-room. 8. Cellar for wines and beer. 9. Billiard-room for at least two tables. 10. Kitchen. 11. Pantry-room. 12. Scullery. 13. Store-room. 14. Vegetable-room. 15. Larder. 16. Coal and wood room. 17. Cool-room. 18. Servants' dining-room. 19. Chief Cook's office, adjoining kitchen. 20. Bedroom for chief cook. 21. Bedroom (one) for scalleryman and man servant. 22. Bedroom (one) for second and third cooks. 23. Bedrooms (four) for eight men. 24. Bathrooms and lavatories. 25. Glass and crockery-room (large). 26. Linen and towels room (large). 27. Cleaning-room for silver. 28. Fruit-room (small). 29. Cigar-room, with gas fire.

Library Accommodation.

1. Provision must be made for at least 100,000 volumes, allowing seven volumes to the lineal foot of shelving. The steel shelving in the existing Library is about 7ft. 4in. high, including plinth and cornice, and provision should be made for re-using it. As already mentioned, it is desirable to have as many of the books as possible in one large hall. In the centre of this hall there will be an office, the balance of the floor-space being taken up with tables, chairs, and lounges. An electric book-lift to be provided, connecting galleries with the floor of room. 2. A newspaper room with filing-shelves all round. 3. Chief Librarian's room, at least 24ft. by 15ft. 4. Assistant Librarian's and Catalogner's room (one). 15ft. by 15ft. 5 Librarian's staff room, say 24ft. by 15ft. All the above rooms must be on the principal floor and adjacent to or off the large hall. The following may be in the basement: —6. Packing and storing-room, adjacent to the book-lift. 7. Room for brooms, parcels, etc., etc. 8. Binder's workshop. 9. Room for maps and charts. A large storage space not less than an area equal to 80ft. by 50ft., which may be in a basement, is required for storing bound newspapers and books that are fallen out of frequent requirement.

Committee Rooms.—

10. Eight Committee-rooms, of dimensions as stated in Schedule A. 11. One or two additional Ministers' rooms, with secretary, typist, and waiting-rooms adjoining, as stated in Schedule A.

12. A number of rooms of moderate size, not less than six nor more than ten, to be provided for members' use. 13. Law Draftsman and assistants: Four rooms to be provided. 14. The necessary lavatory and w.c. accommodation to be provided. 15. Four more Committee-rooms, under either Schedule A or Schedule B.

R McKENZIE.
Minister of Public Works.

Public Works Office,
Wellington, 17th February, 1911 .

Note.—The designs will be judged and the awards made by a competent professional man practising outside the Dominion, who will report to, and, if necessary, confer with a Committee to be appointed by the Government.

PROPOSED PARLIAMENT BUILDINGS, WELLINGTON

Report on Competitive Designs by Colonel Vernon, F.R.I.B.A., Government Architect, New South Wales

Wellington, 27th Sept., 1911.

Sir,—

In accordance with instructions I have, as the appointed Assessor, examined the several designs for the proposed new Parliament Buildings sent in in competition, and have the honour to submit, as the result of my investigations, the following report and award thereon:—

Thirty-three competitors have responded to the invitation, several sending in alternative designs. In all, three hundred and twenty-seven drawings, including thirteen perspective sketches, have been received. In all cases the conditions as regards time for delivery, anonymity, character of the draughting and adherence to the standard scale have been faithfully observed.

A package containing thirty-three sealed envelopes, presumably containing the names and addresses of the several authors, has been placed for safe keeping in the hands of the Under-Secretary for Public Works, to be opened as may be directed by yourself.

It is presumed that all competitors are either architects residing within the Dominion or members of the Civil Service, and their designs therefore are dealt with in this adjudication.

The designs submitted have received the closest critical scrutiny, and have been dealt with and their value assessed as, in my opinion, they more or less meet the requirements, the principal of which may be stated as—

(a) Design of and relative positions of chambers and members' lobby.
(b) Accommodation for and convenience of Ministers and members.
(c) Accommodation for and convenience of officials.
(d) Accommodation for and convenience of public
(e) General design of the library and adjuncts.
(f) General design of Bellamy's and adjuncts.
(g) Internal architectural effect of the design.
(h) Architectural design of the exterior.
(i) Compliance with general conditions as to position on the site, cost, etc.

No single design contains all the good points, and several of the better ones are defaced by serious defects. Again, the work of adjudication is not made easier by the apparent indifference of some authors to the important question of cost, whose designs for this reason necessarily lose ground.

The author of design marked No. 26, which would from its merits have forced itself into the very front rank, has apparently deliberately given away his chance by submitting a design involving the site of the present library—an arrangement not permitted by the conditions.

After the fullest consideration I have selected nine designs as showing, in my opinion, the most merit under all conditions, and have placed them in the following order:—

No. 18	.. ..	First
No. 6	.. ..	Second
No. 17	.. ..	Third.
No. 15	.. ..	Fourth.
No. 3	.. ..	Fifth.
No. 24	.. ..	Sixth.
No. 31	.. ..	Seventh.
No. 30	.. ..	Eighth.
No. 26	.. ..	Ninth .

And, in accordance with the Conditions of Competition and the authority vested in me by my appointment as Assessor, I award the premiums as follows:—

To the author of design No. 18, first prize, £1000.
To the author of design No. 6, second prize, £500.
To the author of design No. 27, third prize, £300.
To the author of design No. 15, fourth prize, £200.

The response by the architects of New Zealand to the invitation of the Government is a spirited one, and the result must be gratifying, inasmuch as the architectural skill necessary for the designing and erecting of this important building is demonstrated as being at hand and available.

I desire to acknowledge the excellent facilities afforded me by the Under-Secretary for Public Works for scrutinizing this large number of drawings, and also the valuable and willing personal assistance of Mr. W. McNamara, of the Public Works Department, in the large amount of clerical work and arrangements involved in the scrutiny.

I have, etc.,

W. L. VERNON, F.R.I.B.A.,
Government Architect, New South Wales.

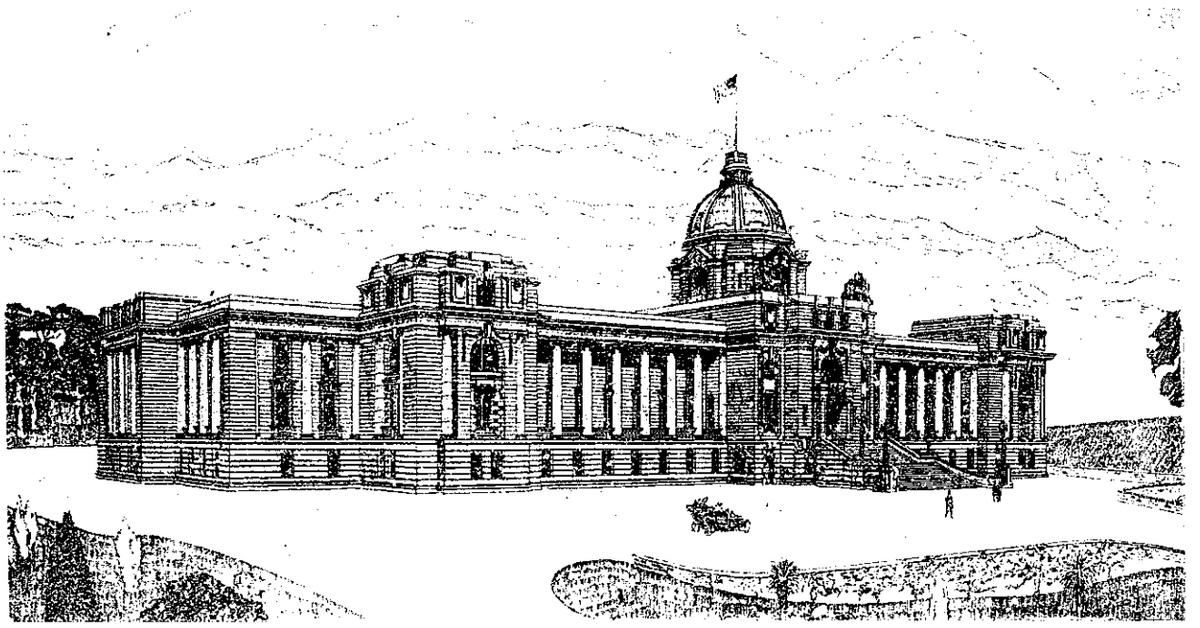
The Hon Minister of Public Works,
Wellington

Designs and Authors.

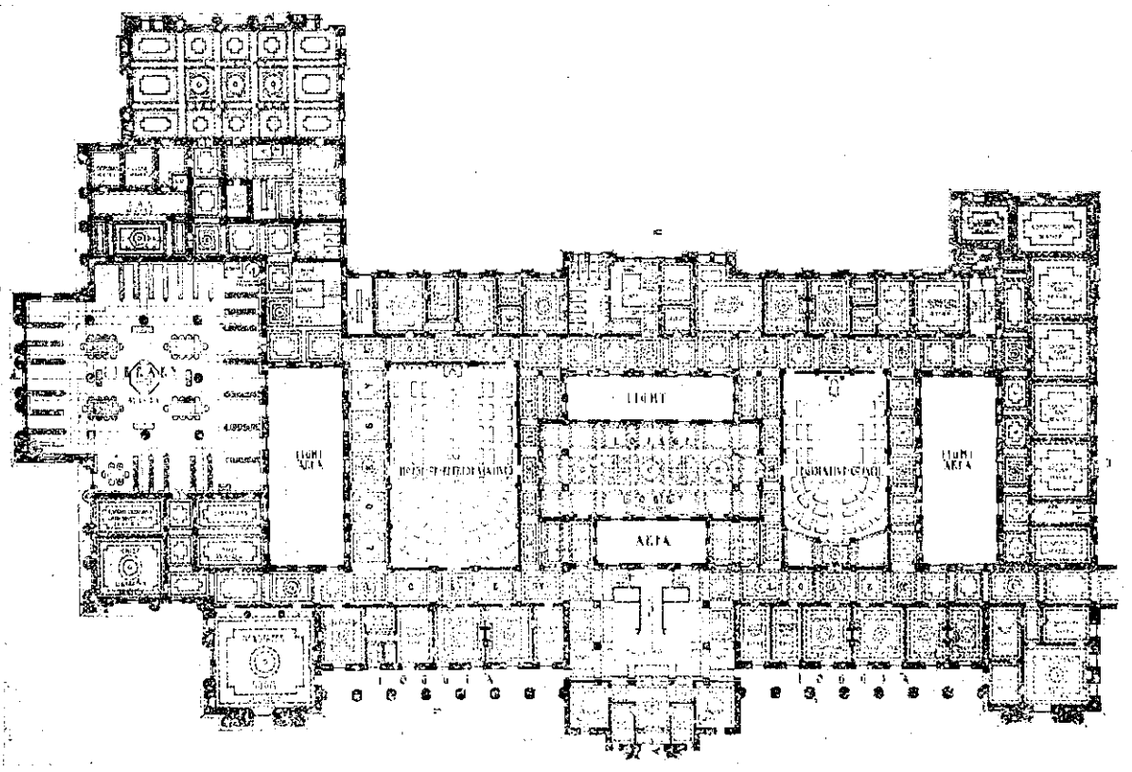
1. Alex. D. Spiers, Picton.
2. R. Loweish, Auckland.
3. G. A. Troup and W. Gray Young, Wellington.
4. Blake and Bennie, Wellington.
5. Beere and Greenish, Wellington.
6. Thomas Turnbull & Son and J. S Seddon, Wellington.
7. G. A. Troup and W. G. Young, Wellington.
8. Wm. M. Page, Wellington
9. G. A. Troup, Young, and G. Robb, Wellington.
10. Leslie D. Coombes, Dunedin.
11. Frank W. Petre Dunedin.
12. D. Murray Kean, Wellington
13. F. Mitchell & Co., c/o Mr. Clere, Wellington.
14. Dand. B. Patterson, Auckland.
15. John Campbell and C. A. Lawrence, Wellington.
16. Wm. Houlker, Jun., Nelson.
17. Charlesworth & Callender, Wellington.
18. John Campbell and Claude Paton, Wellington.
19. L. G. West & Son, Palmerston North.
20. G. G. Schwartz, Wellington.
21. G. G. Ager, Christchurch.
22. O'Connor and Bartley, Auckland.
23. Salmond and Vanes Dunedin.
24. Henry S Morran and Owen, Arcade, Auckland.
25. Edmond Anscombe, Dunedin.
26. McDonald & Dunning, Dunedin.
27. Wm. H. Gummer, Auckland.
28. J. C. Maddison, Christchurch.
29. J. C. Maddison, Christchurch.
30. S. Hurst Seager and Hart, Christchurch
31. Hugh C. Grierson, Auckland.
32. O. A. Jorgensen, Palmerston North.
33. J. Charlesworth, Wellington

FIRST PRIZE (£1000)

DESIGN BY MESSRS J. CAMPBELL, F.R.I.B.A., F.N.Z.I.A., AND C. PATON, WELLINGTON



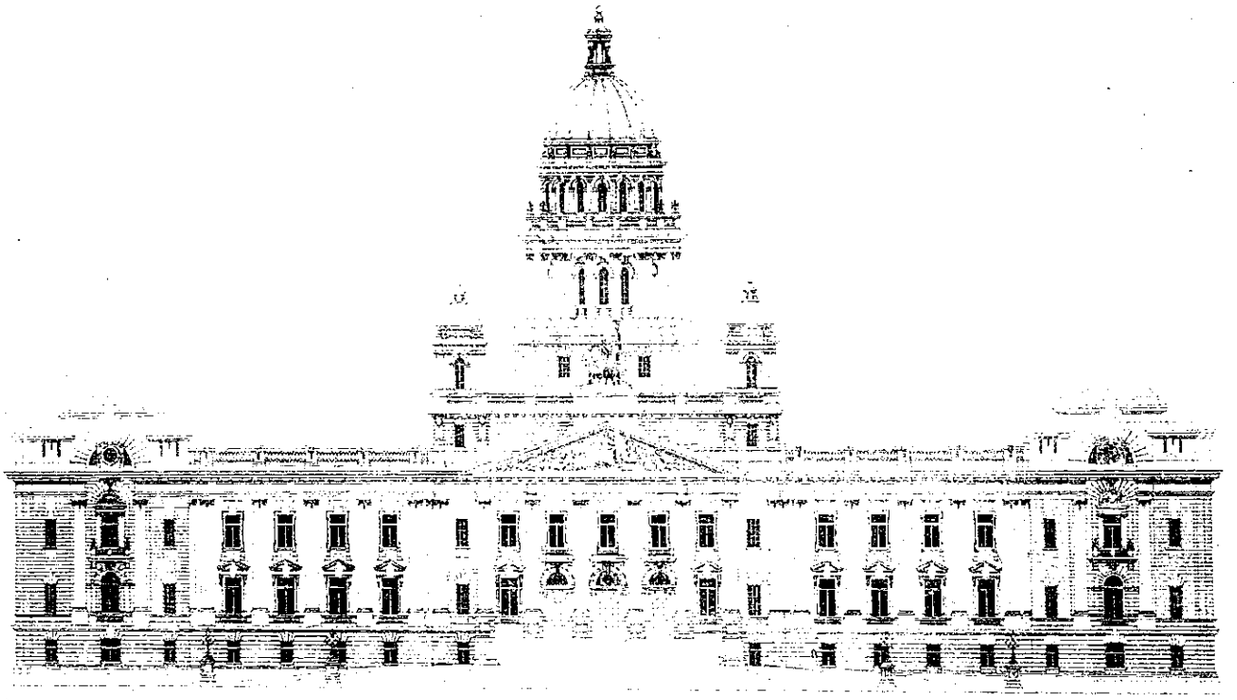
PERSPECTIVE SKETCH



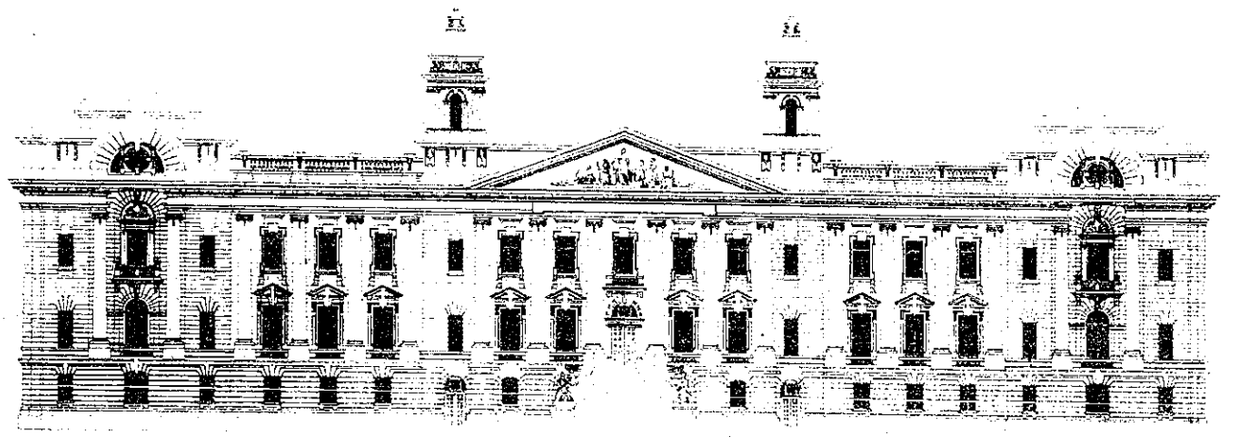
PRINCIPAL FLOOR PLAN

SECOND PRIZE (£500)

DESIGN BY MESSRS THOS. TURNBULL & SON, F.R.I.B.A., F.N.Z.I.A., AND J. S. SEDDON, WELLINGTON

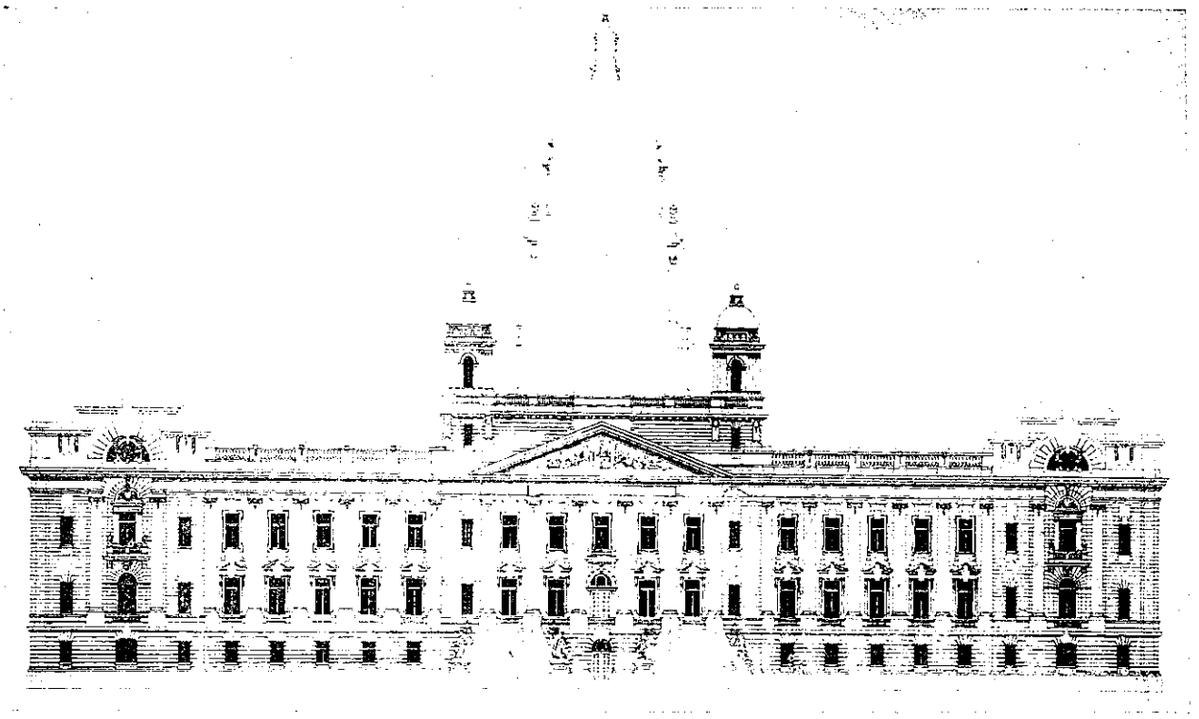


FRONT ELEVATION



SIDE ELEVATION

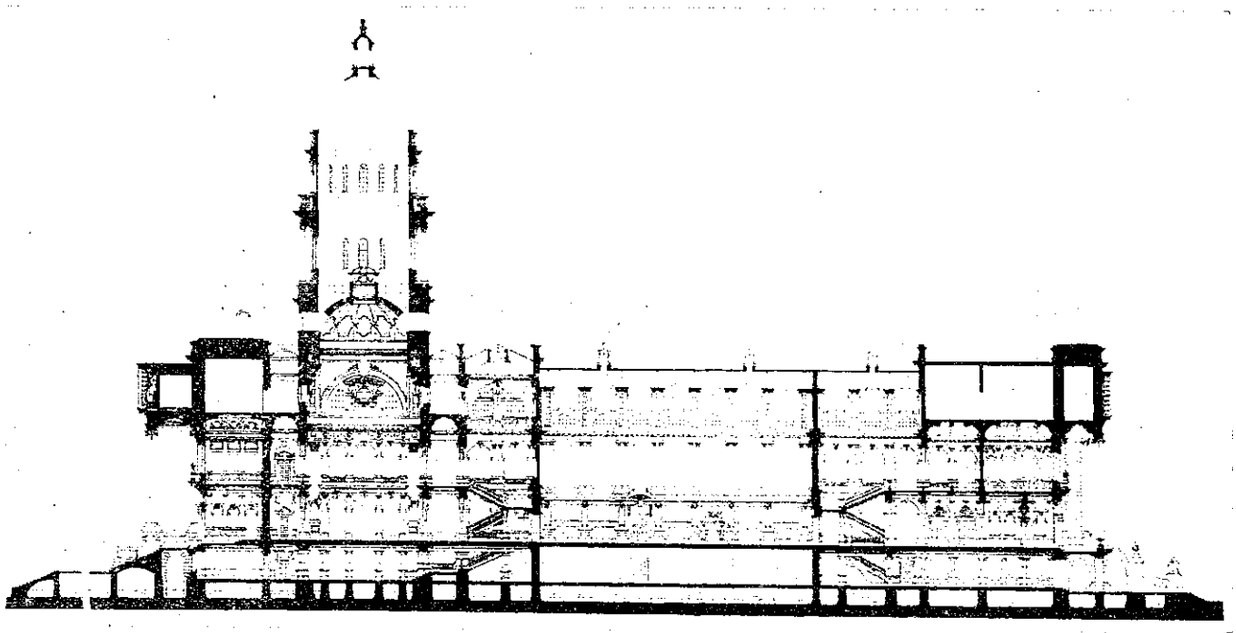
SECOND PRIZE *(Continued)*



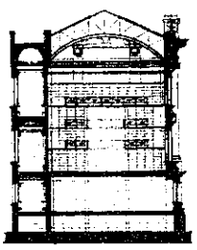
BACK ELEVATION

½IN. DETAIL

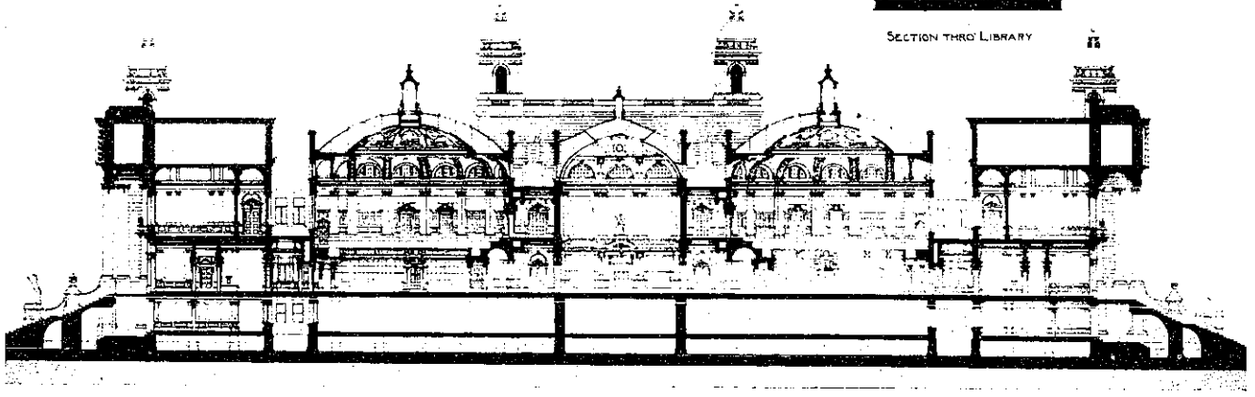
SECOND PRIZE *(Continued)*



LONGITUDINAL SECTION

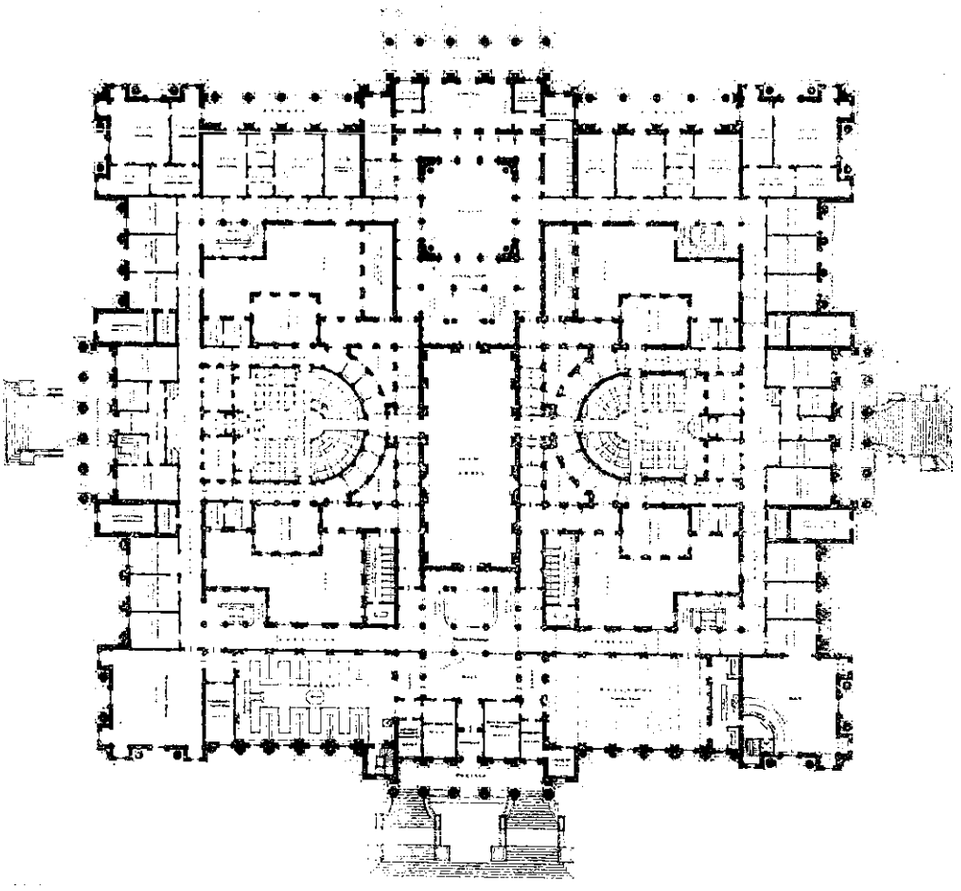


SECTION THRO' LIBRARY

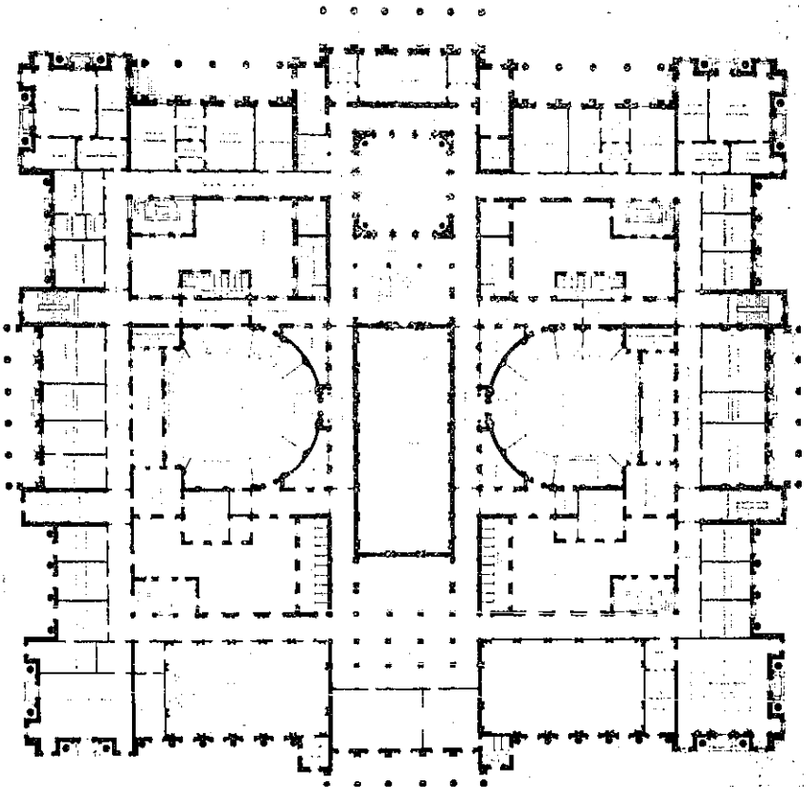


CROSS SECTION

SECOND PRIZE *(Continued)*



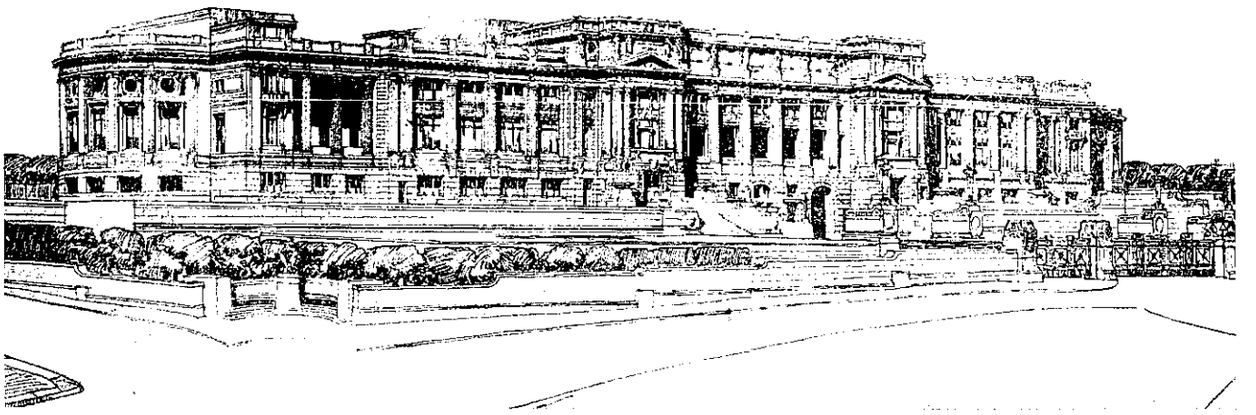
GROUND FLOOR PLAN



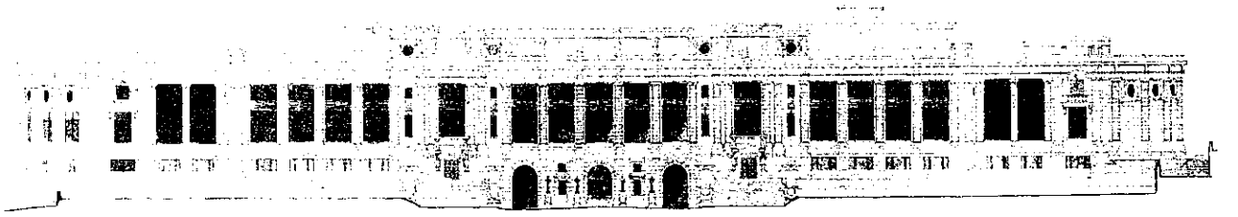
FIRST FLOOR PLAN

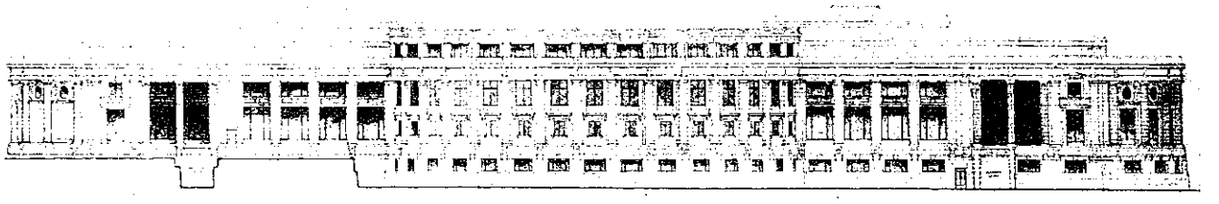
THIRD PRIZE (£300)

DESIGN BY WM. H. GUMMER, AUCKLAND

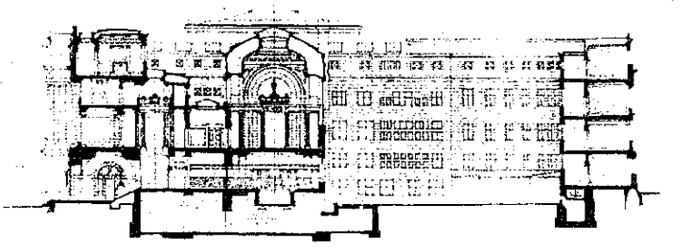


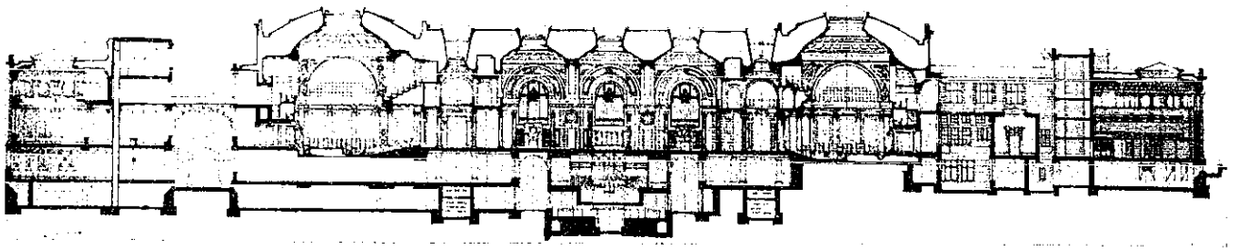
PERSPECTIVE SKETCH





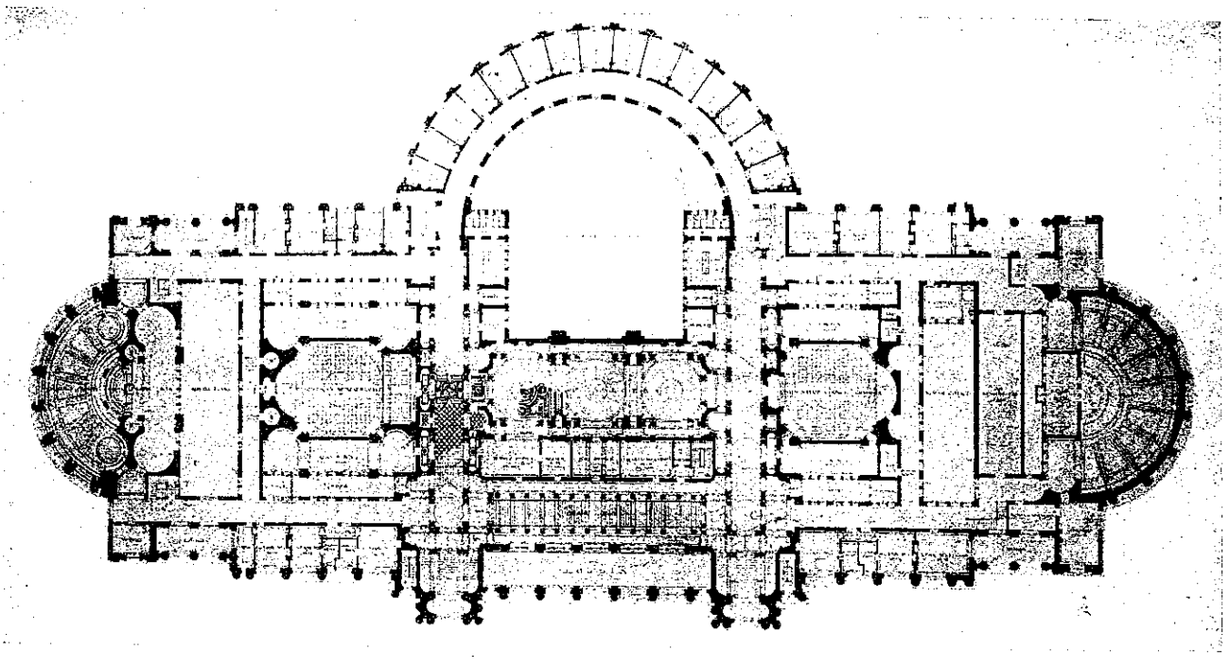
FRONT AND WEST ELEVATIONS



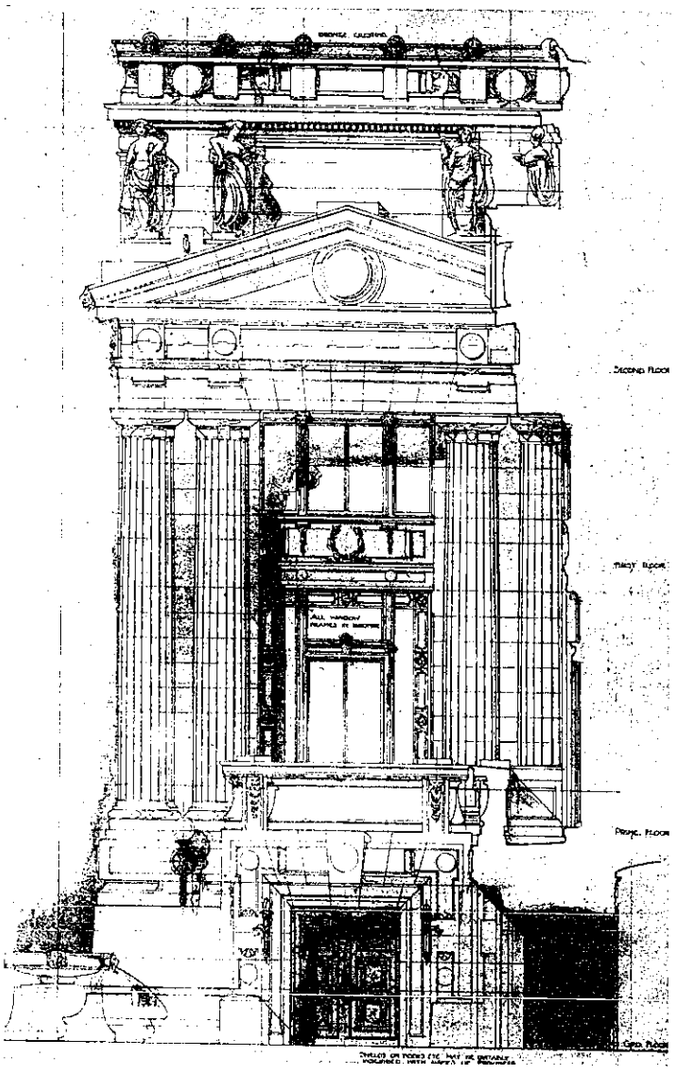


SECTIONS

THIRD PRIZE *(Continued)*

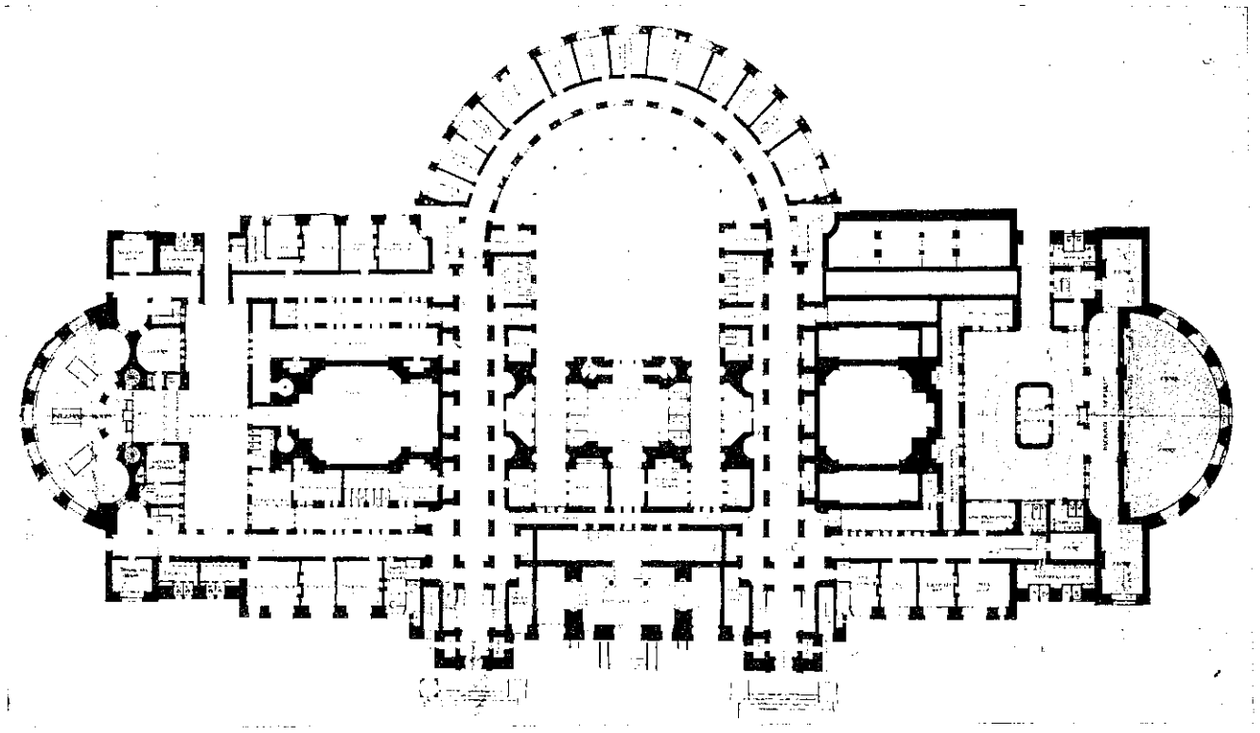


PRINCIPAL FLOOR PLAN

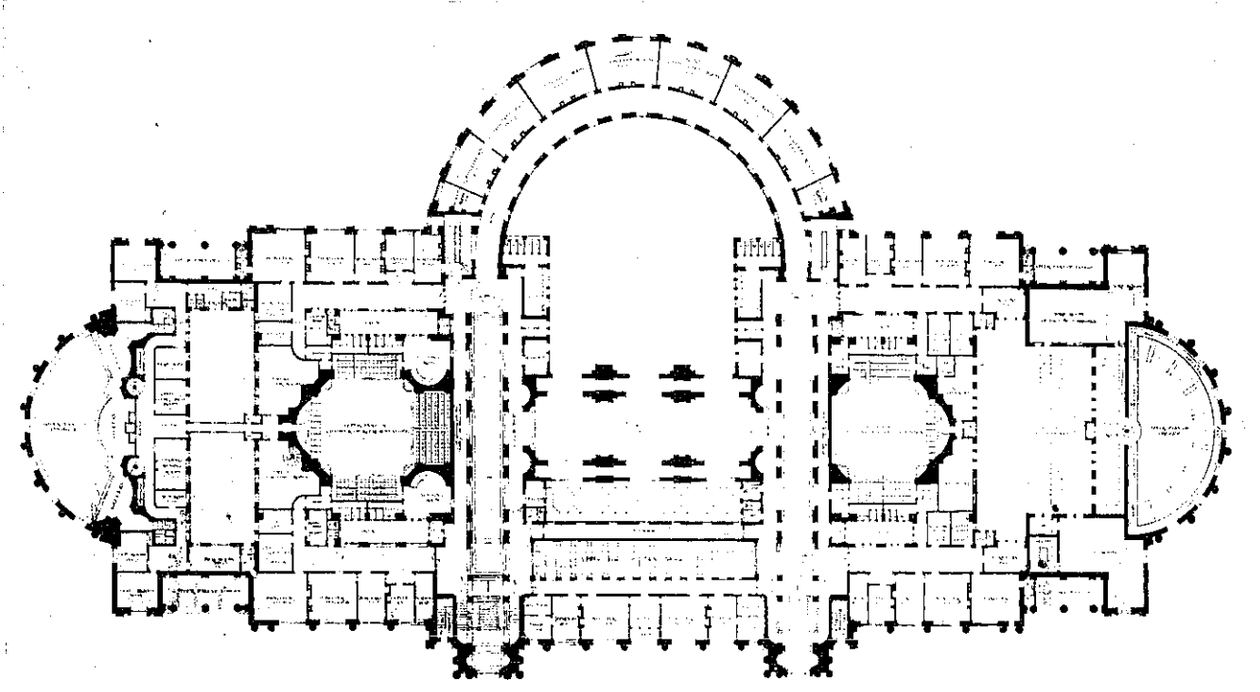


DETAIL OF PORTION OF FACADE

THIRD PRIZE *(Continued)*



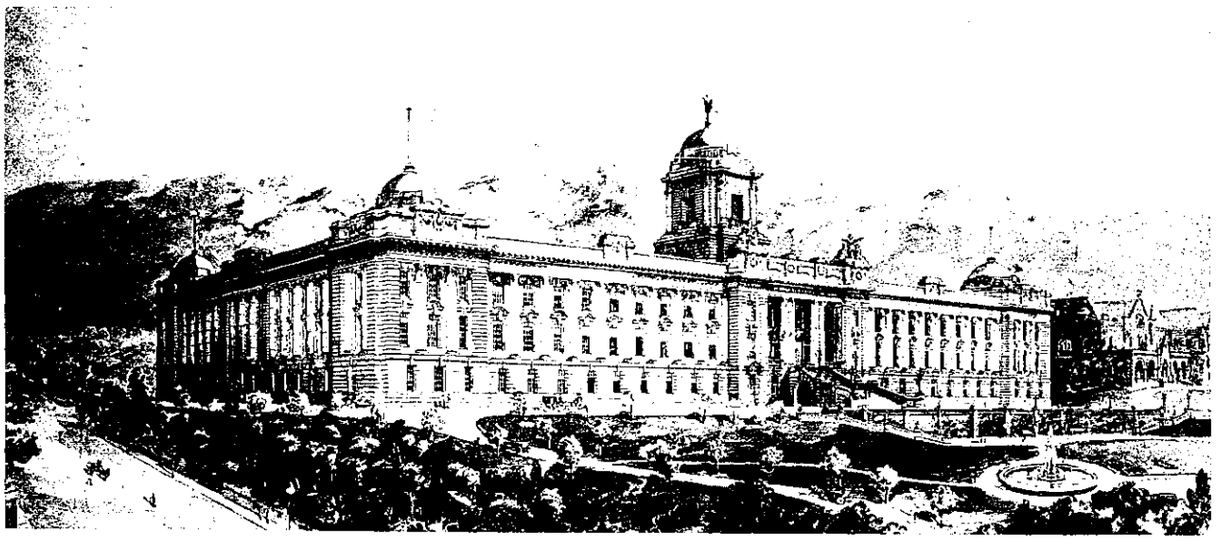
GROUND FLOOR



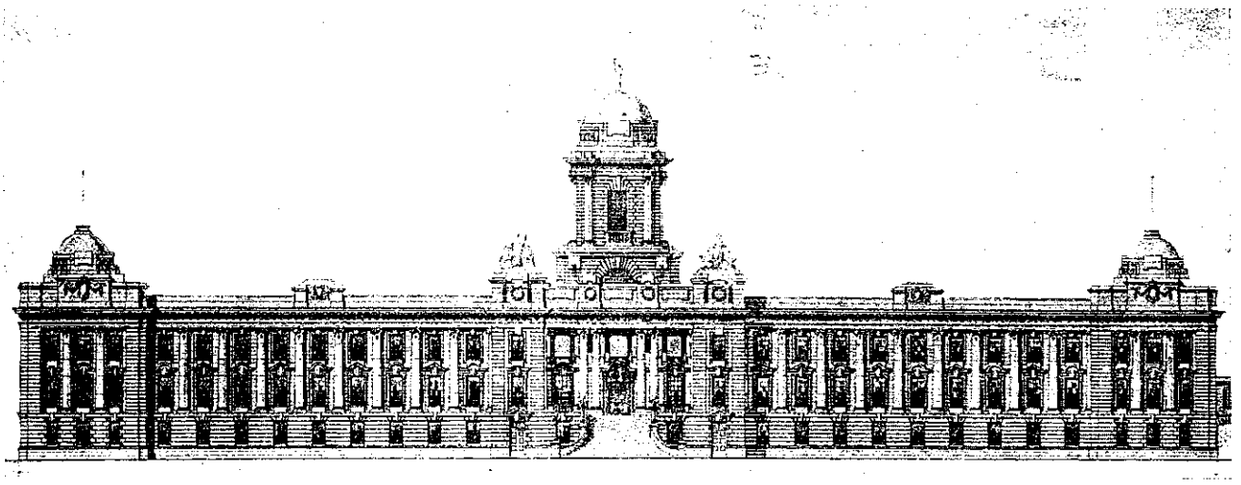
FIRST FLOOR

FOURTH PRIZE (£200)

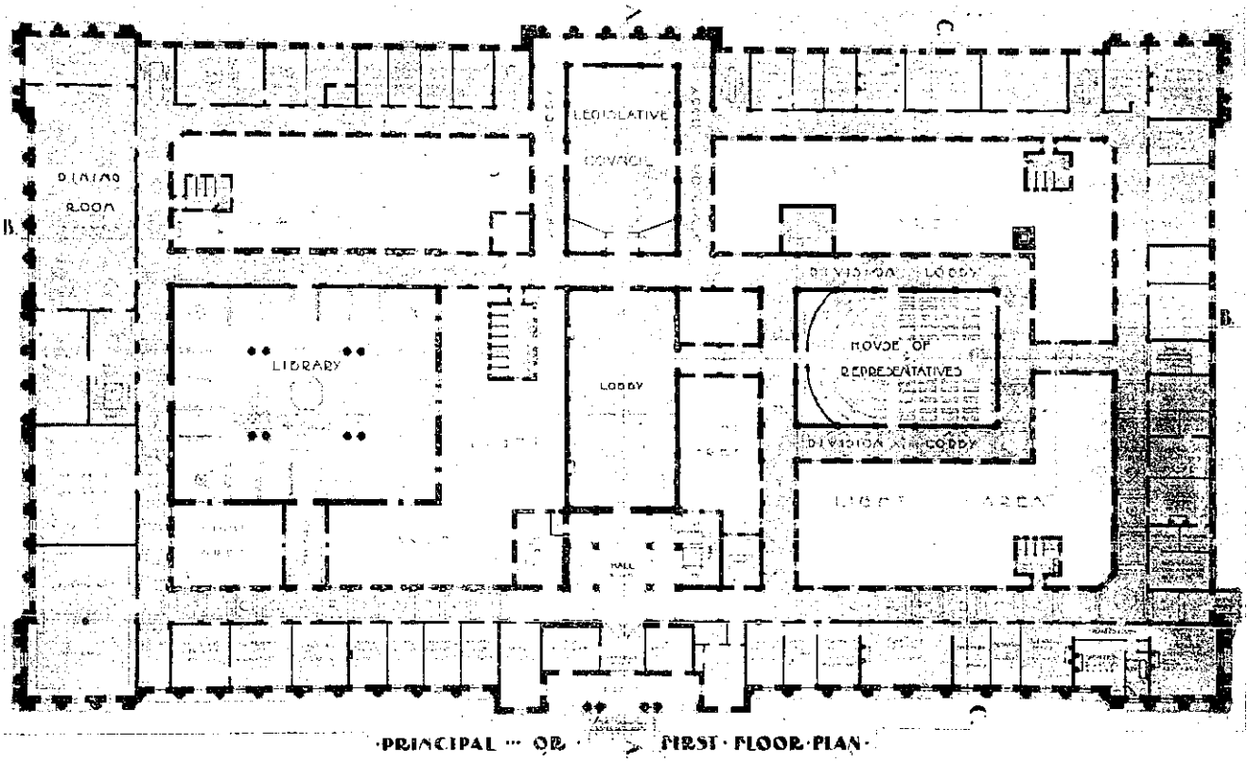
DESIGN BY MESSRS J. CAMPBELL, F.R.I.B.A., F.N.Z.I.A., AND C. A. LAWRENCE, A.N.Z.I.A., WELLINGTON



PERSPECTIVE



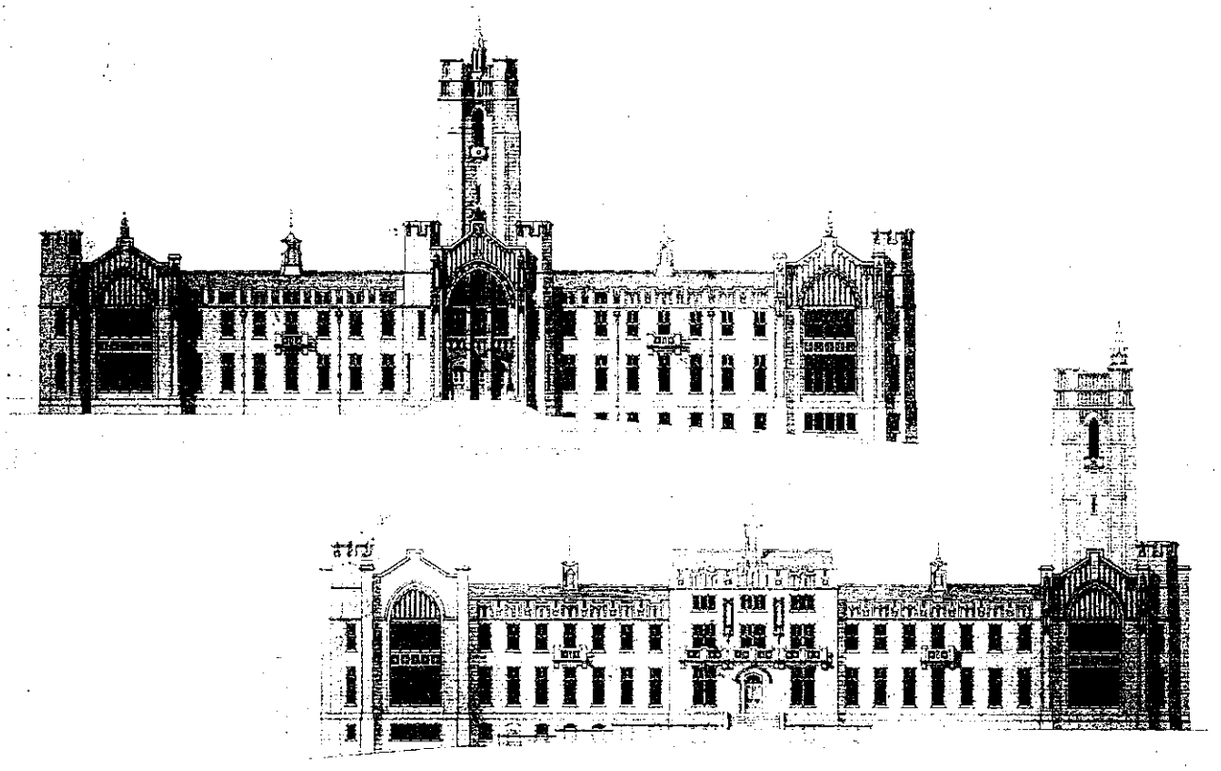
EAST ELEVATION



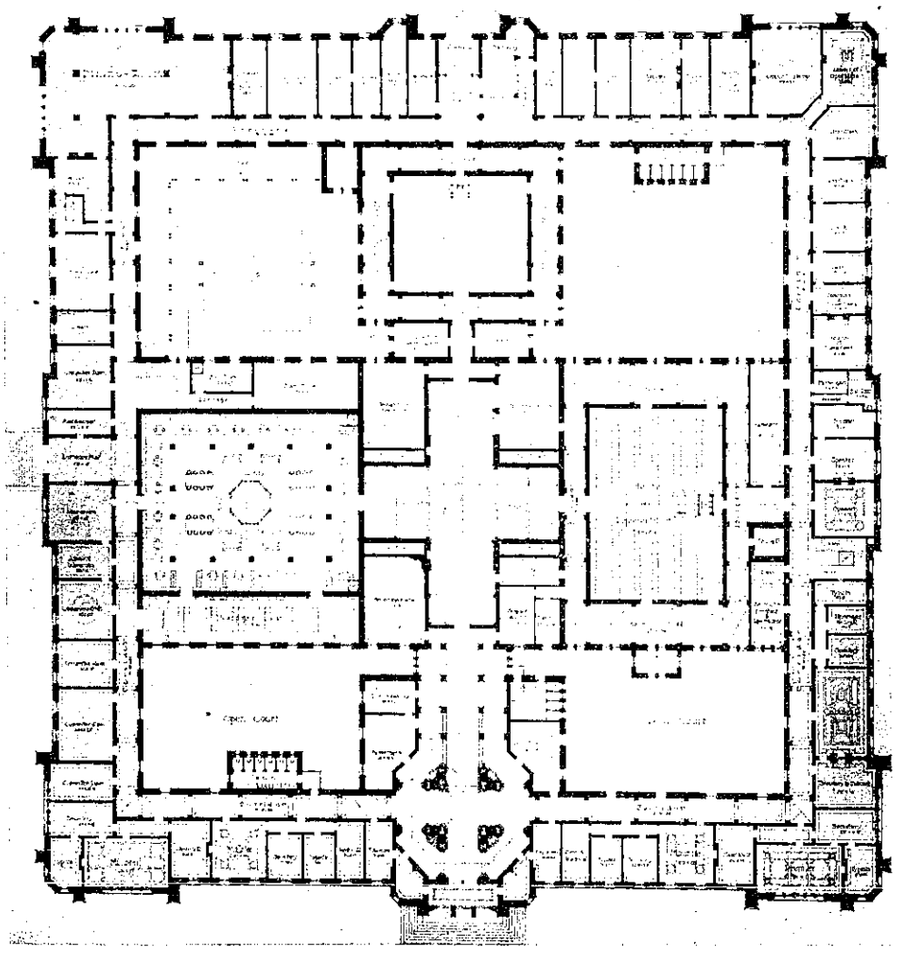
PRINCIPAL OR FIRST FLOOR PLAN

FIFTH IN ORDER OF MERIT

DESIGN BY G. A. TROUP, F.R.I.B.A., F.N.Z.I.A., AND W. GRAY YOUNG, A.N.Z.I.A., WELLINGTON



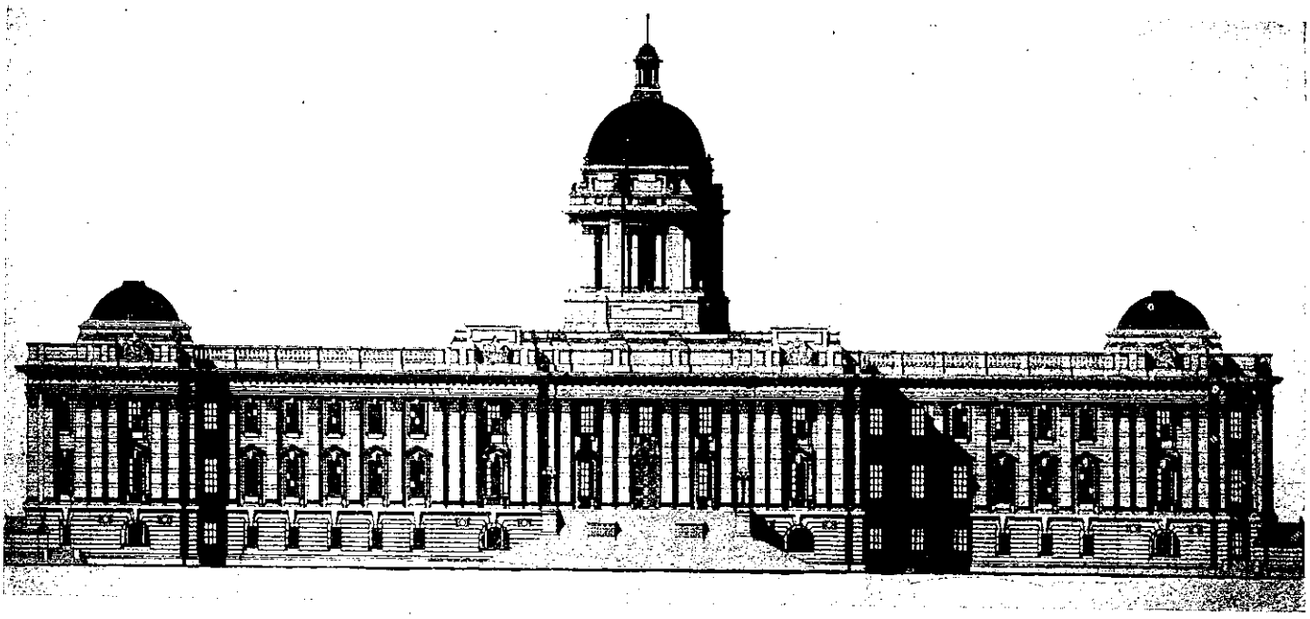
ELEVATIONS



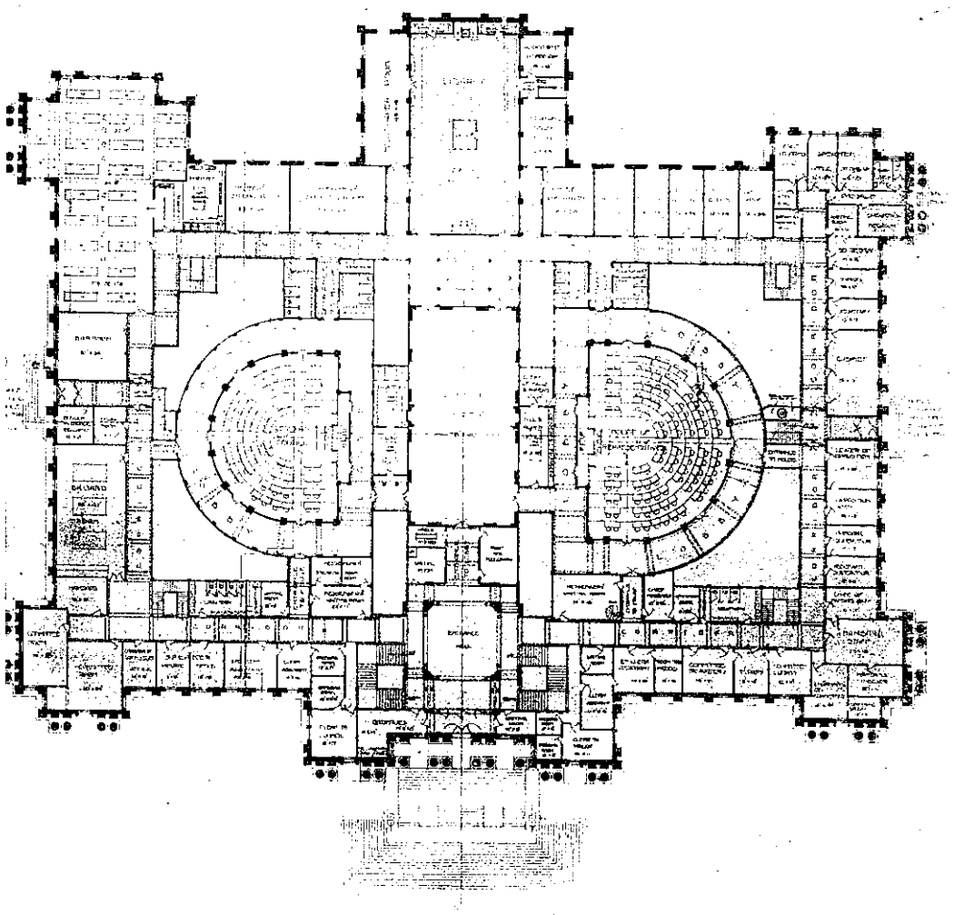
GROUND FLOOR PLAN

SIXTH IN ORDER OF MERIT

DESIGN BY MESSRS. H. S. MORRAN, A.R.I.B.A., F.N.Z.I.A., AND R. B. OWEN, AUCKLAND



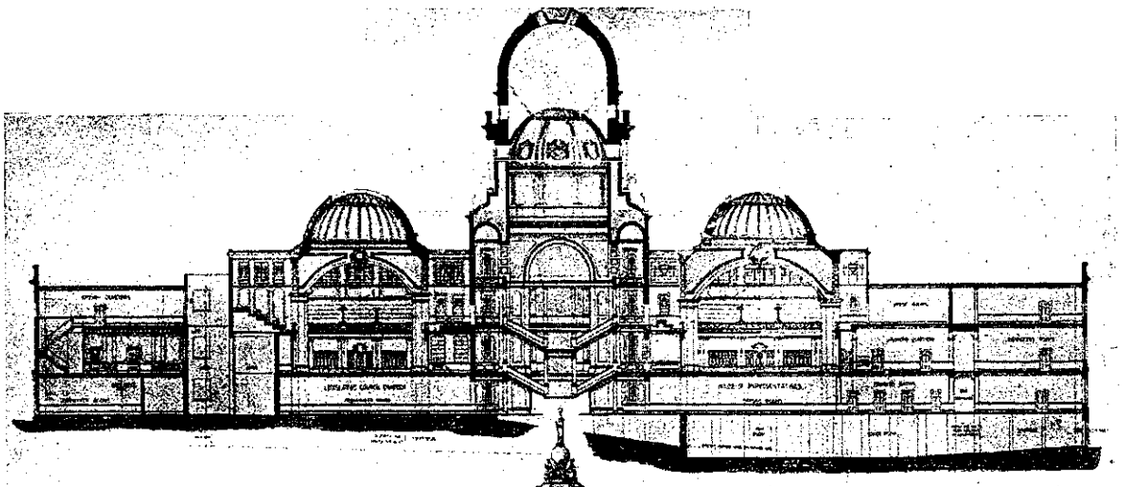
EAST ELEVATION



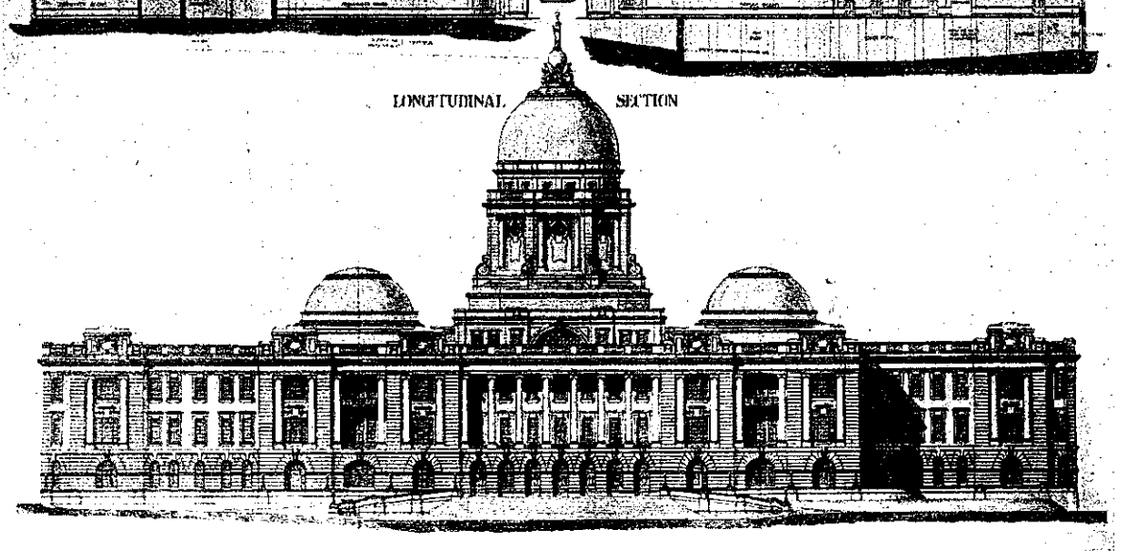
PRINCIPAL FLOOR PLAN

SEVENTH IN ORDER OF MERIT

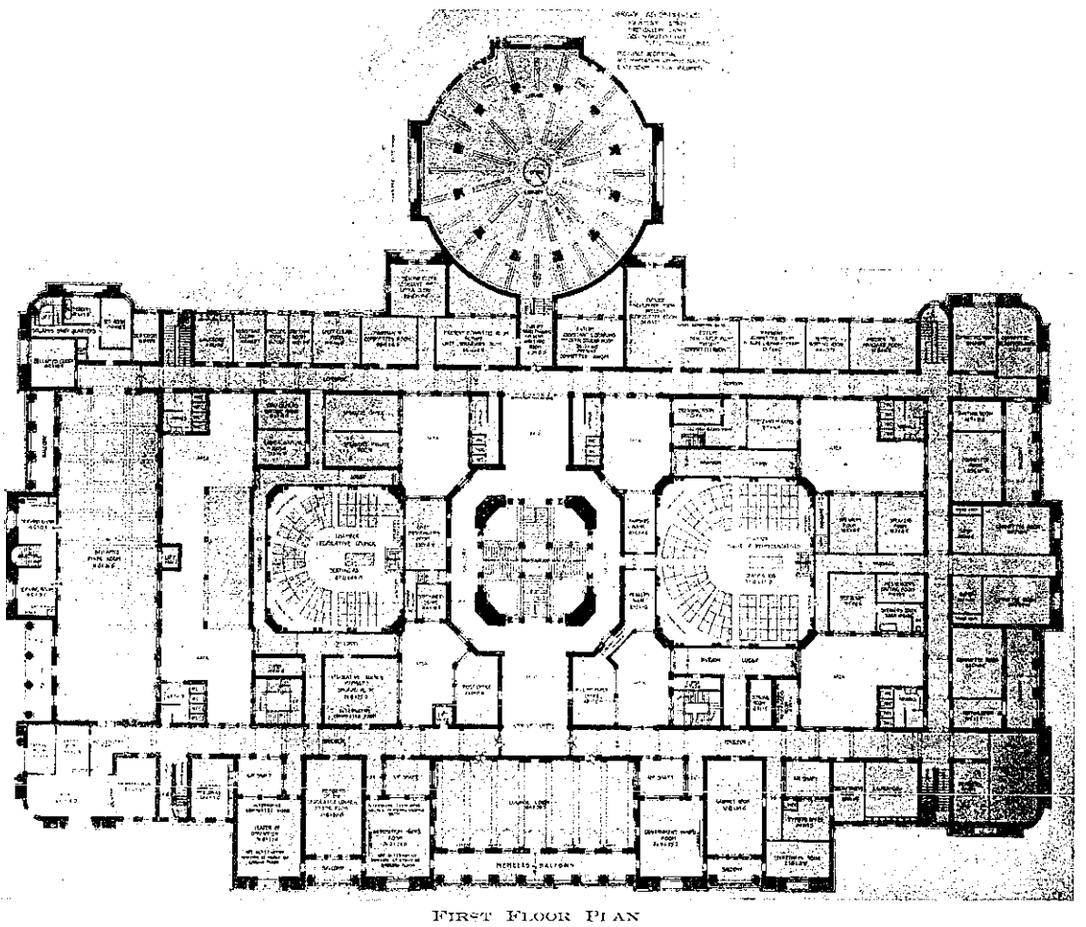
DESIGN BY HUGH C. GRIERSON, AUCKLAND



LONGITUDINAL SECTION



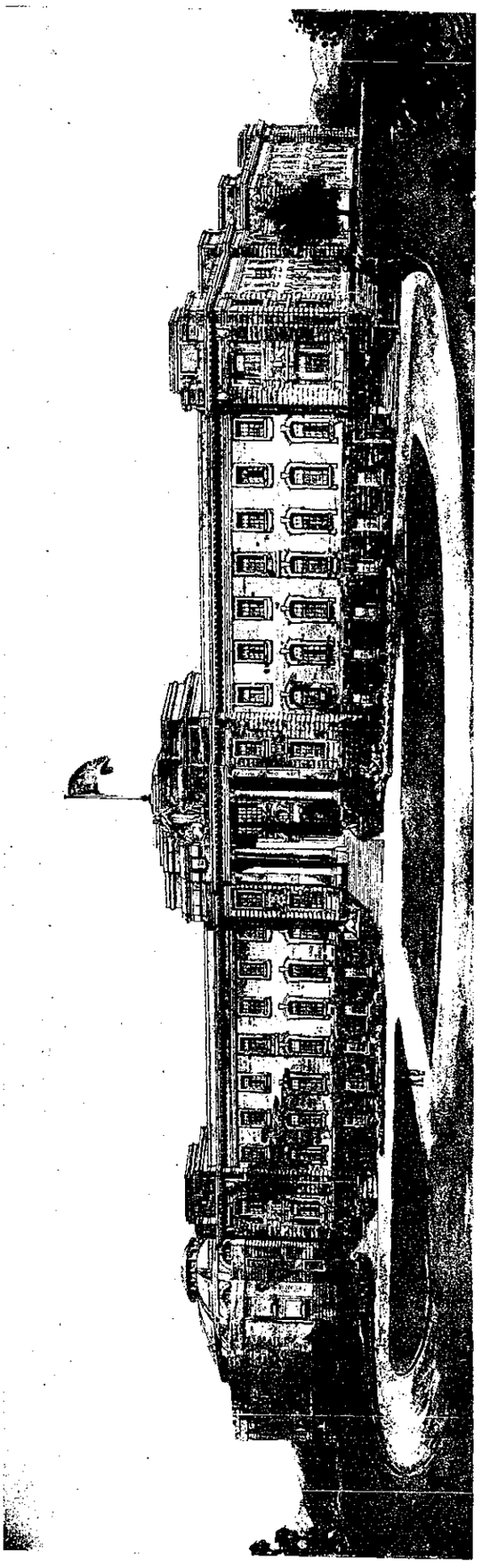
EAST ELEVATION



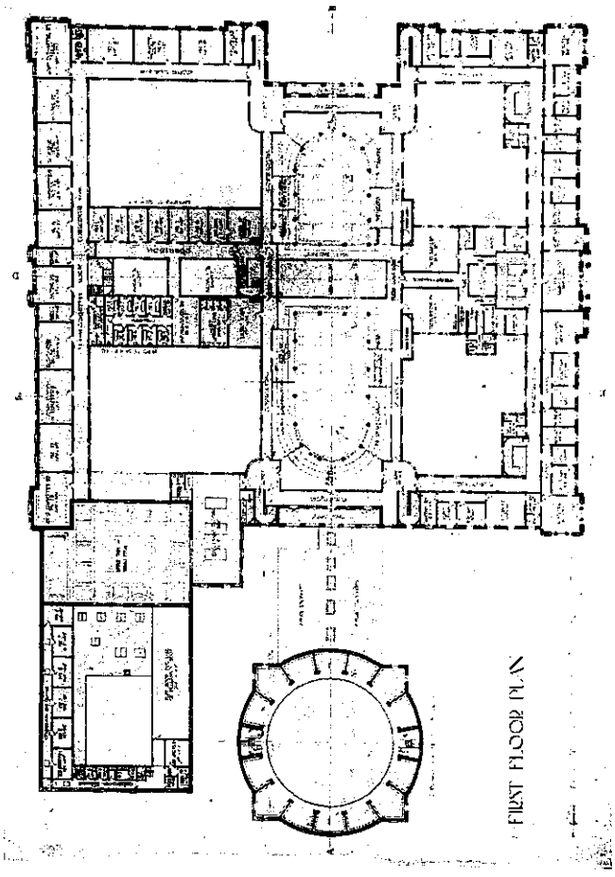
FIRST FLOOR PLAN

EIGHTH IN ORDER OF MERIT

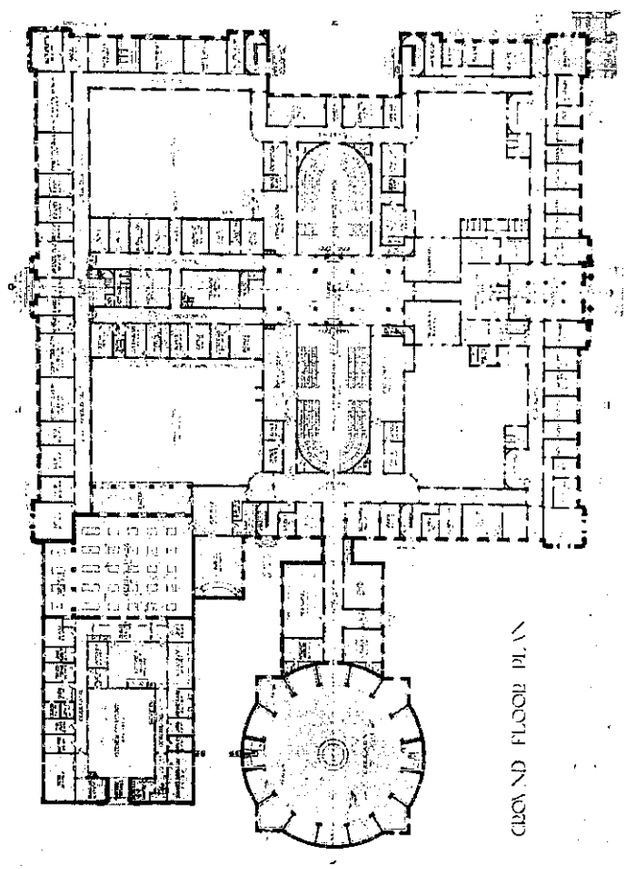
DESIGN BY MESSRS S. HURST SEAGER, F.R.I.B.A., F.N.Z.I.A., AND G. A. J. HART, A.N.Z.I.A., CHRISTCHURCH



PERSPECTIVE



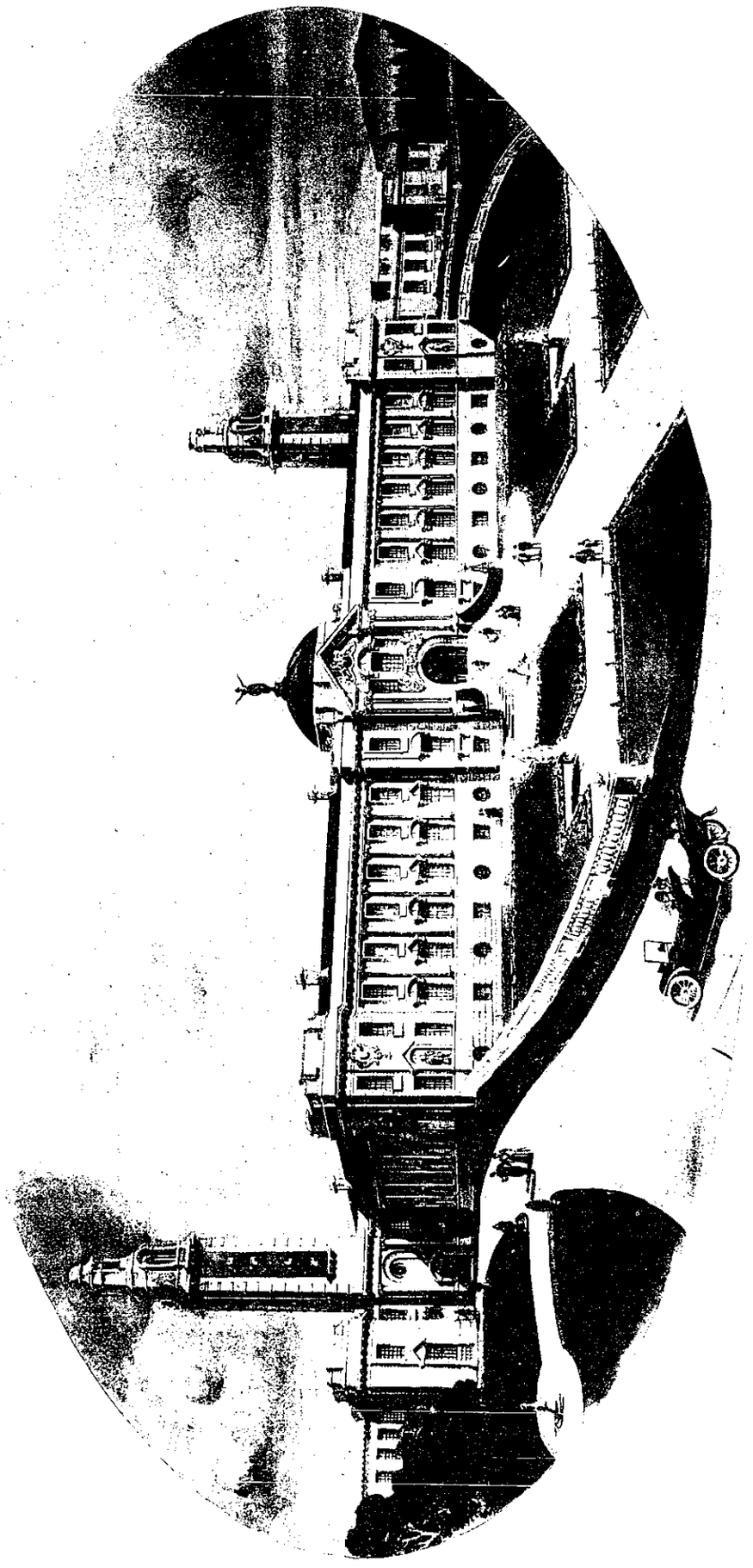
FIRST FLOOR PLAN



SECOND FLOOR PLAN

NINTH IN ORDER OF MERIT

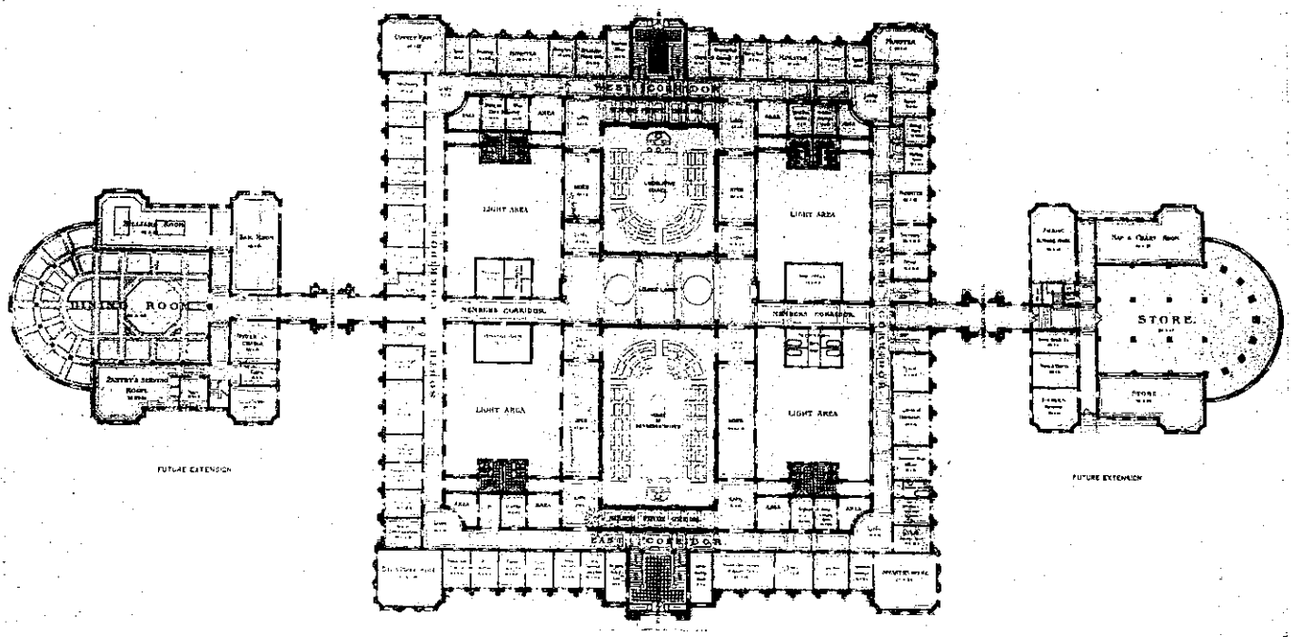
DESIGN BY MESSRS. F. MCDONALD AND WM. DUNNING, DUNEDIN



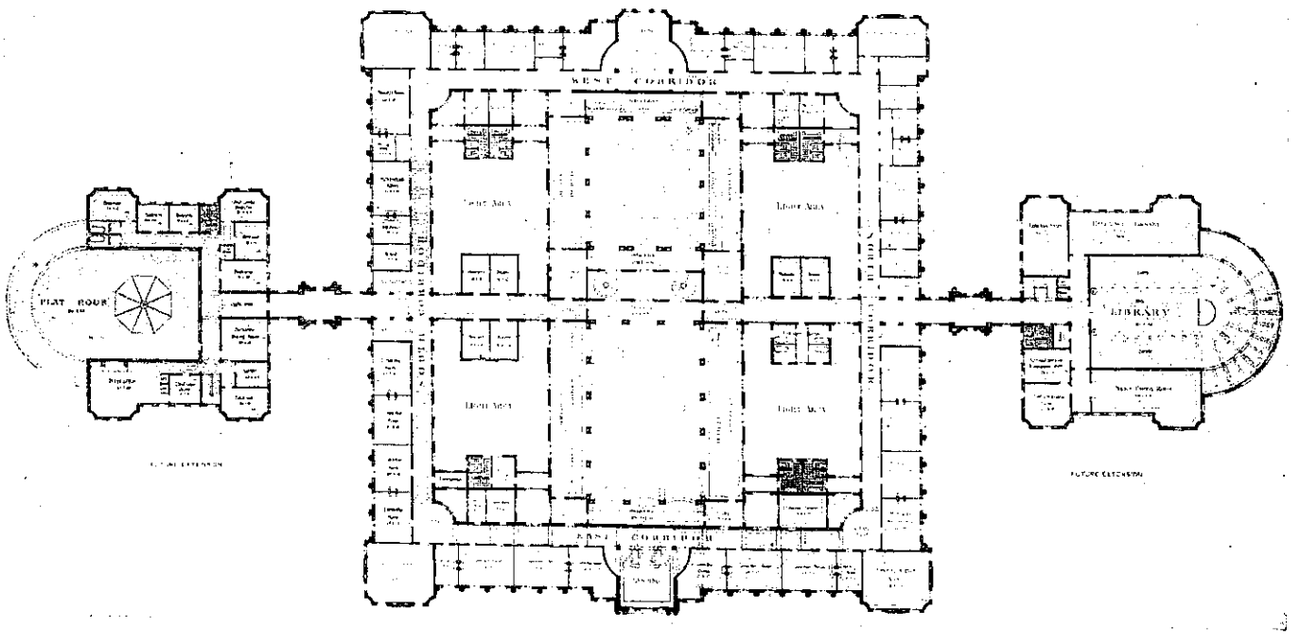
PERSPECTIVE SKETCH

This design is the one referred to as No. 26 in the Assessor's Award (p. 902)

NINTH IN ORDER OF MERIT *(Continued)*



GROUND FLOOR PLAN

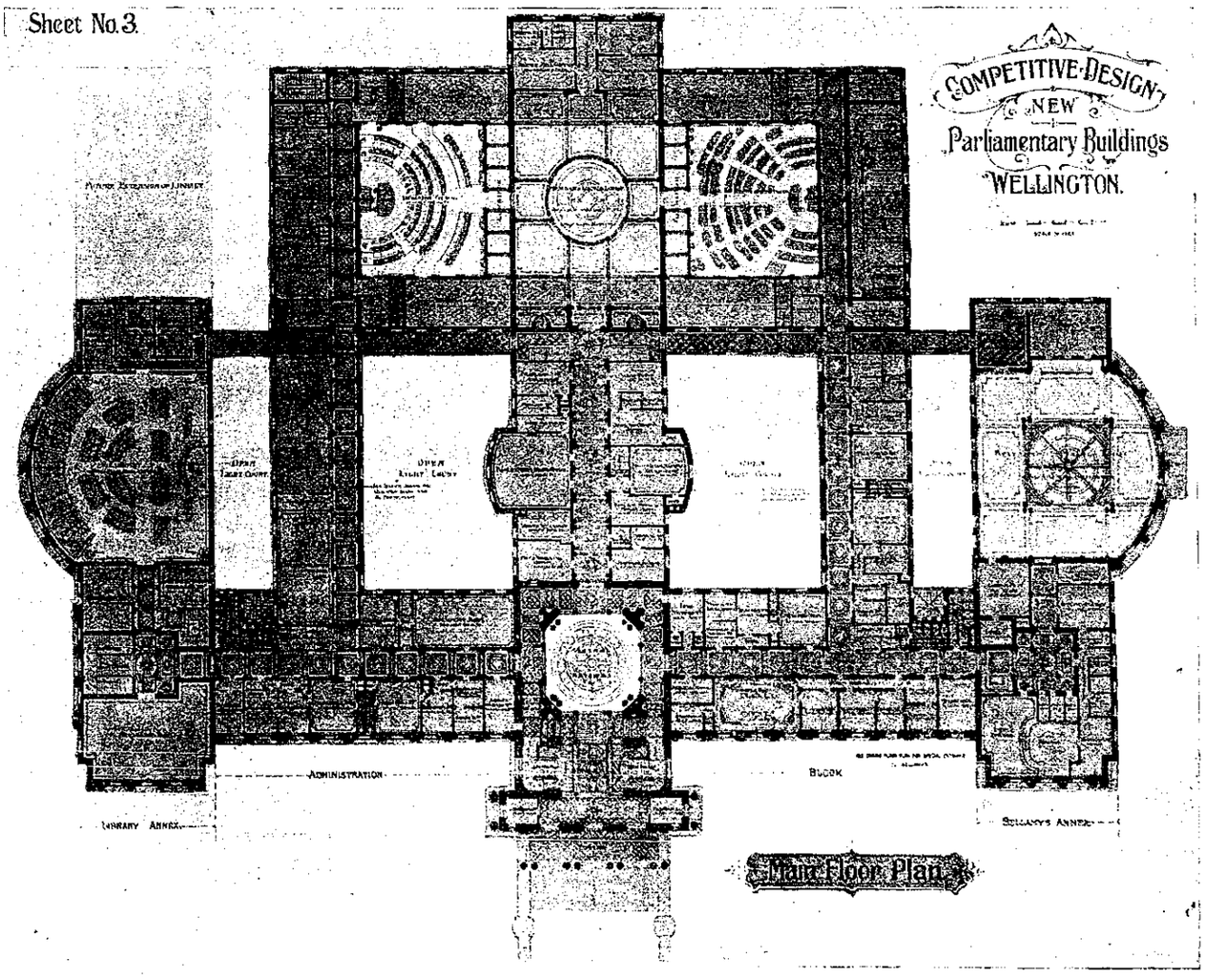


FIRST FLOOR PLAN

DESIGN

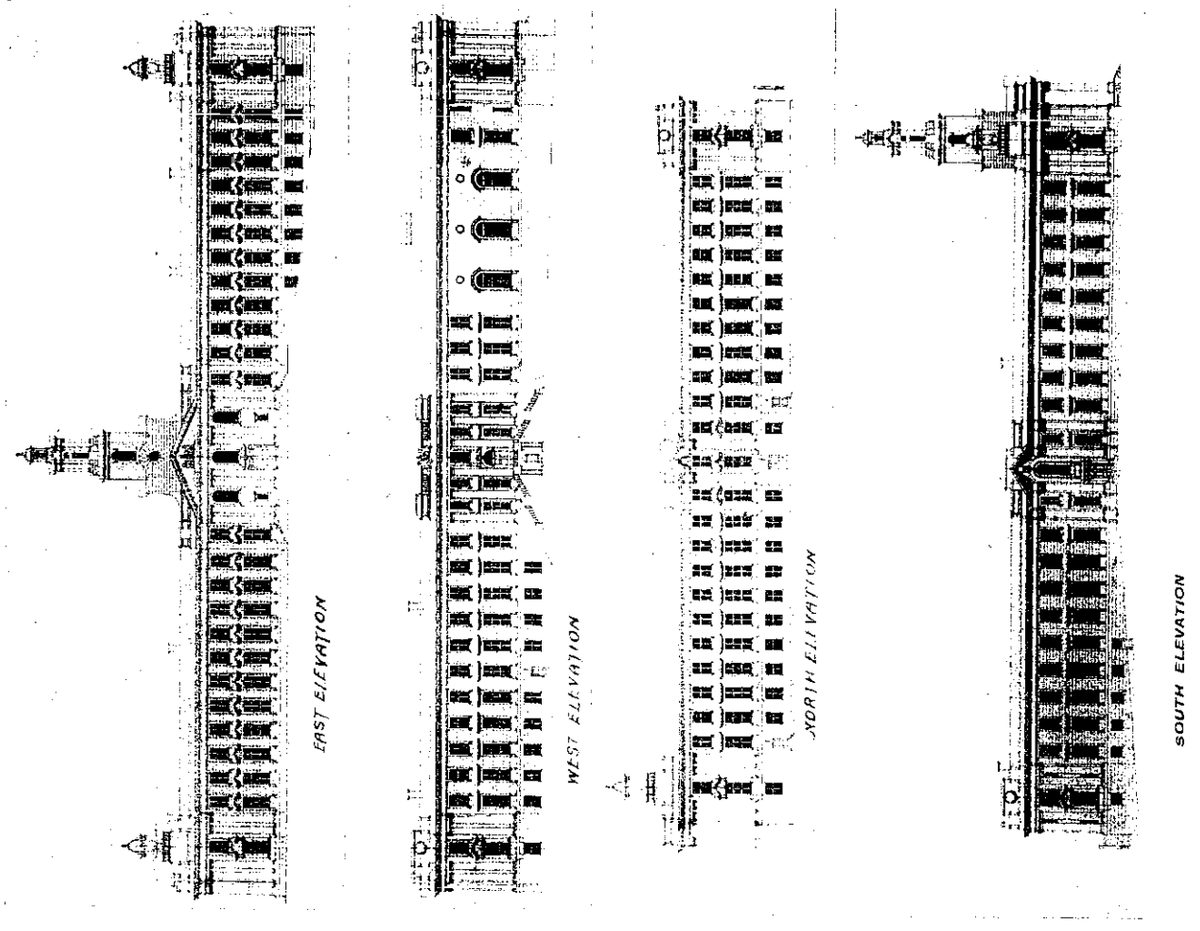
BY EDMUND ANSCOMBE, A.N.Z.I.A., DUNEDIN

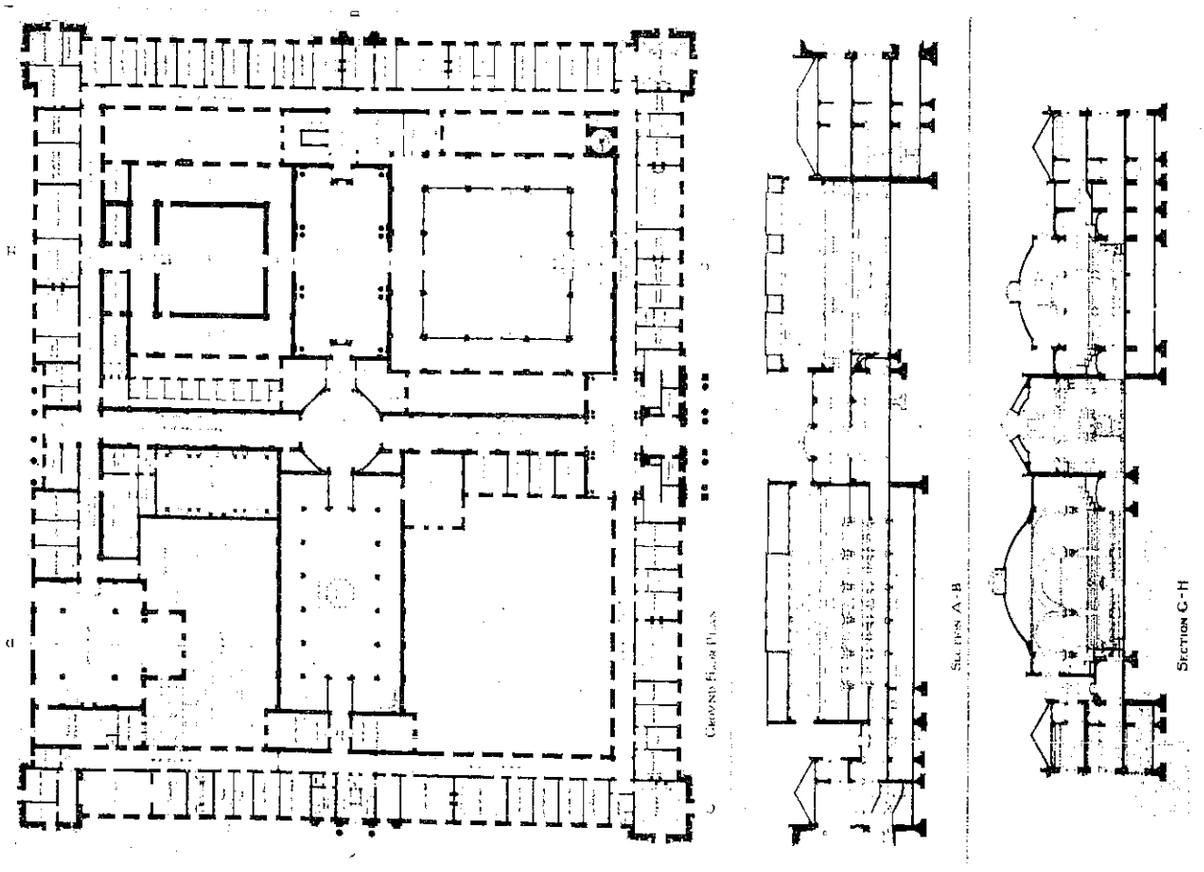
PERSPECTIVE SKETCH



DESIGN

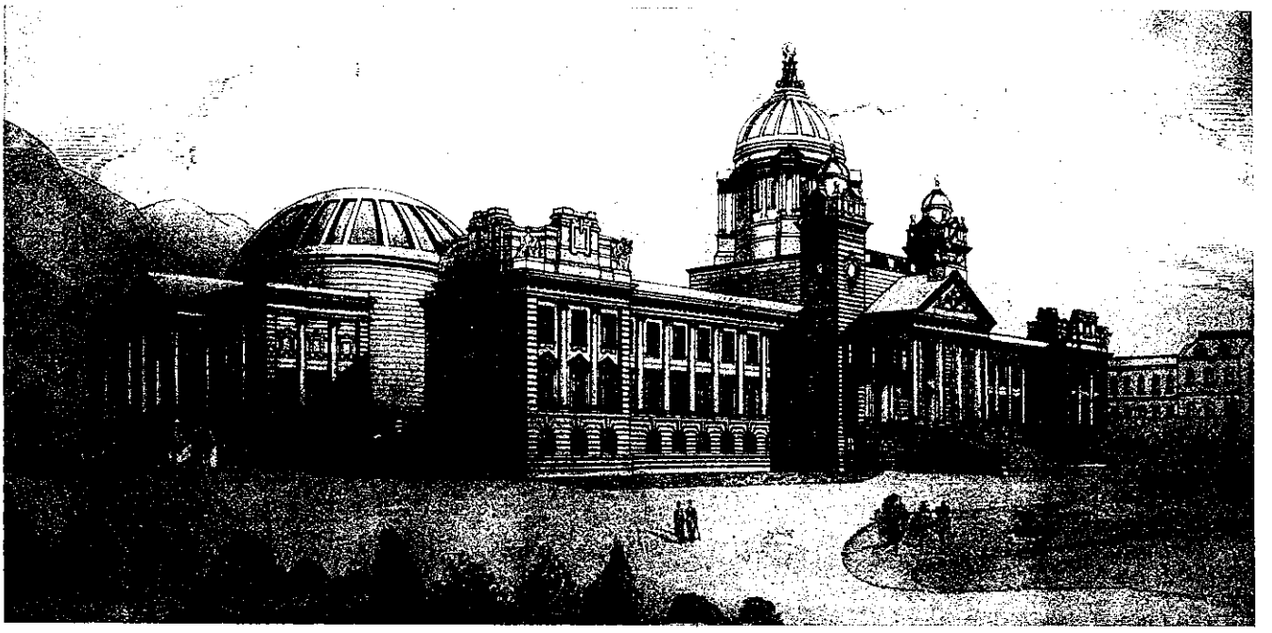
BY W. N. PAGE, WELLINGTON



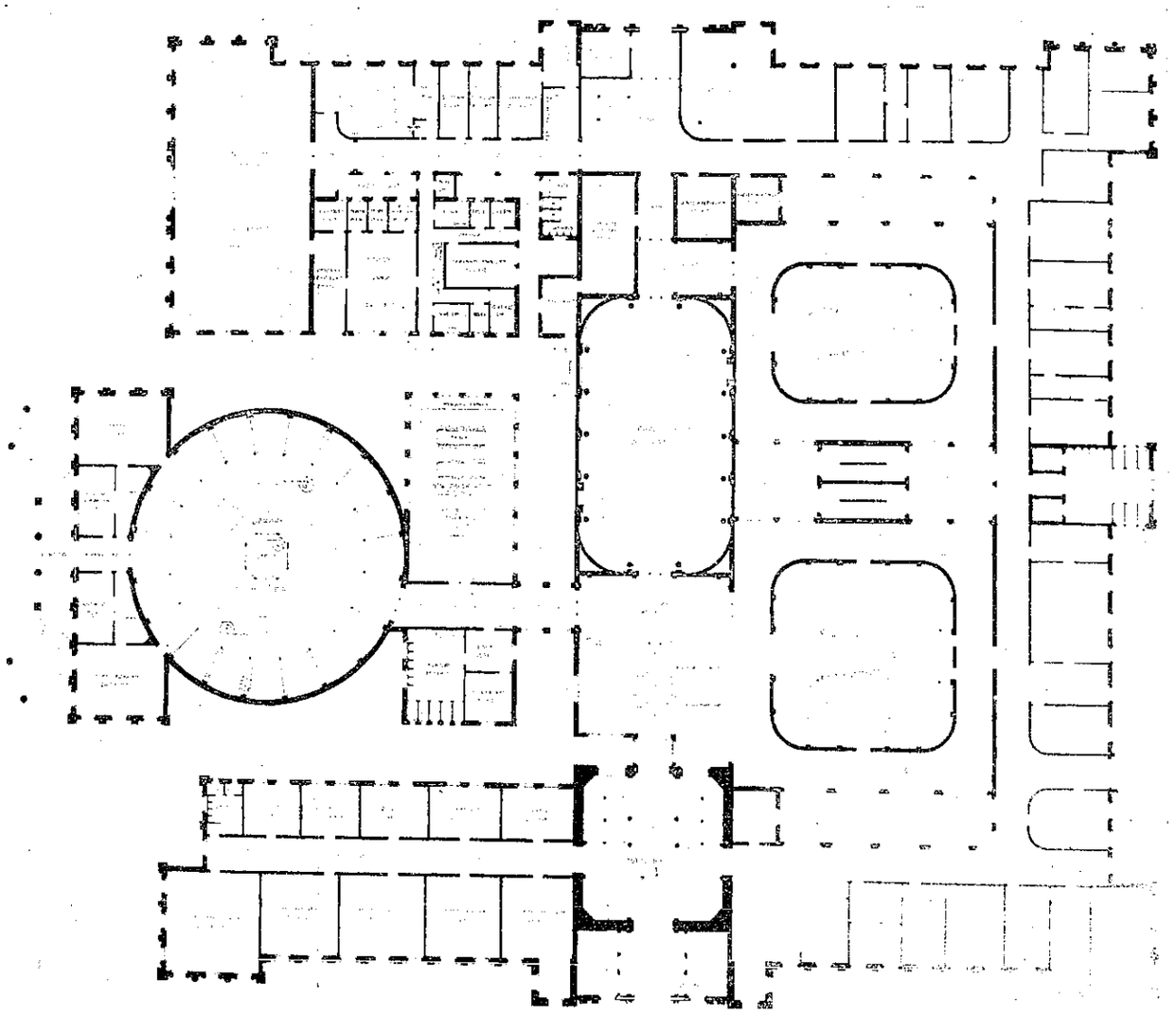


DESIGN

BY MESSRS E. M. BLAKE, F.R.I.B.A., AND J. BENNIE, F.N.Z.I.A., WELLINGTON



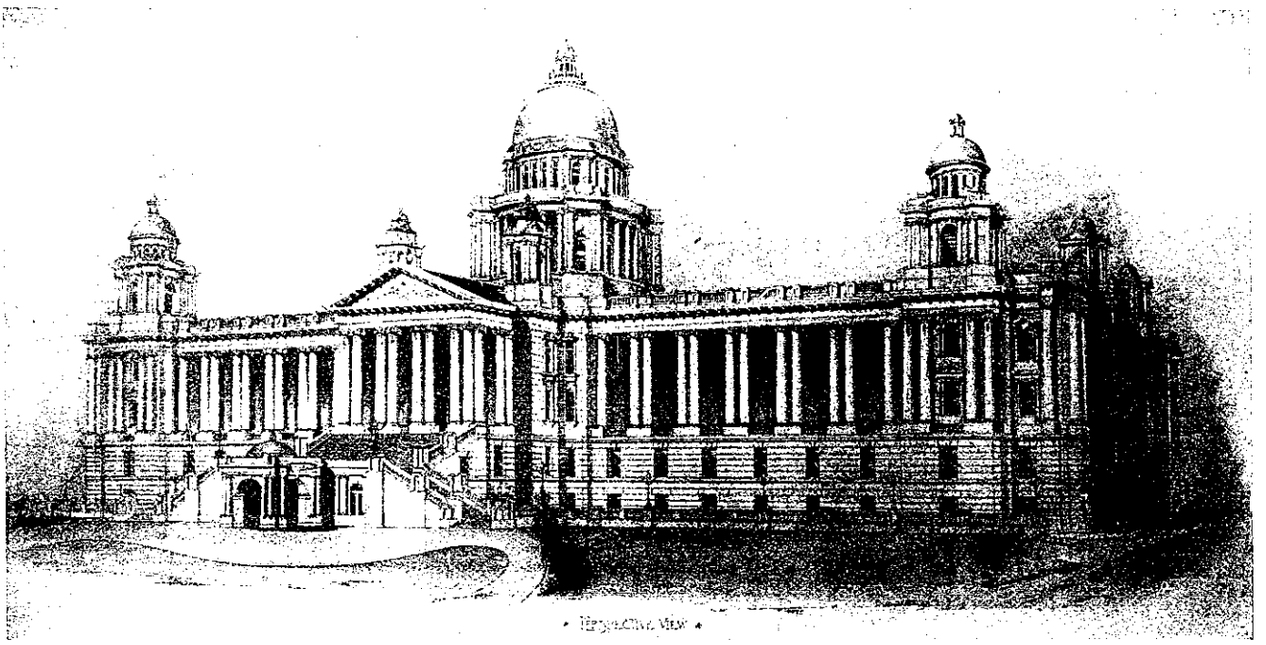
PERSPECTIVE SKETCH



PRINCIPAL FLOOR PLAN

DESIGN

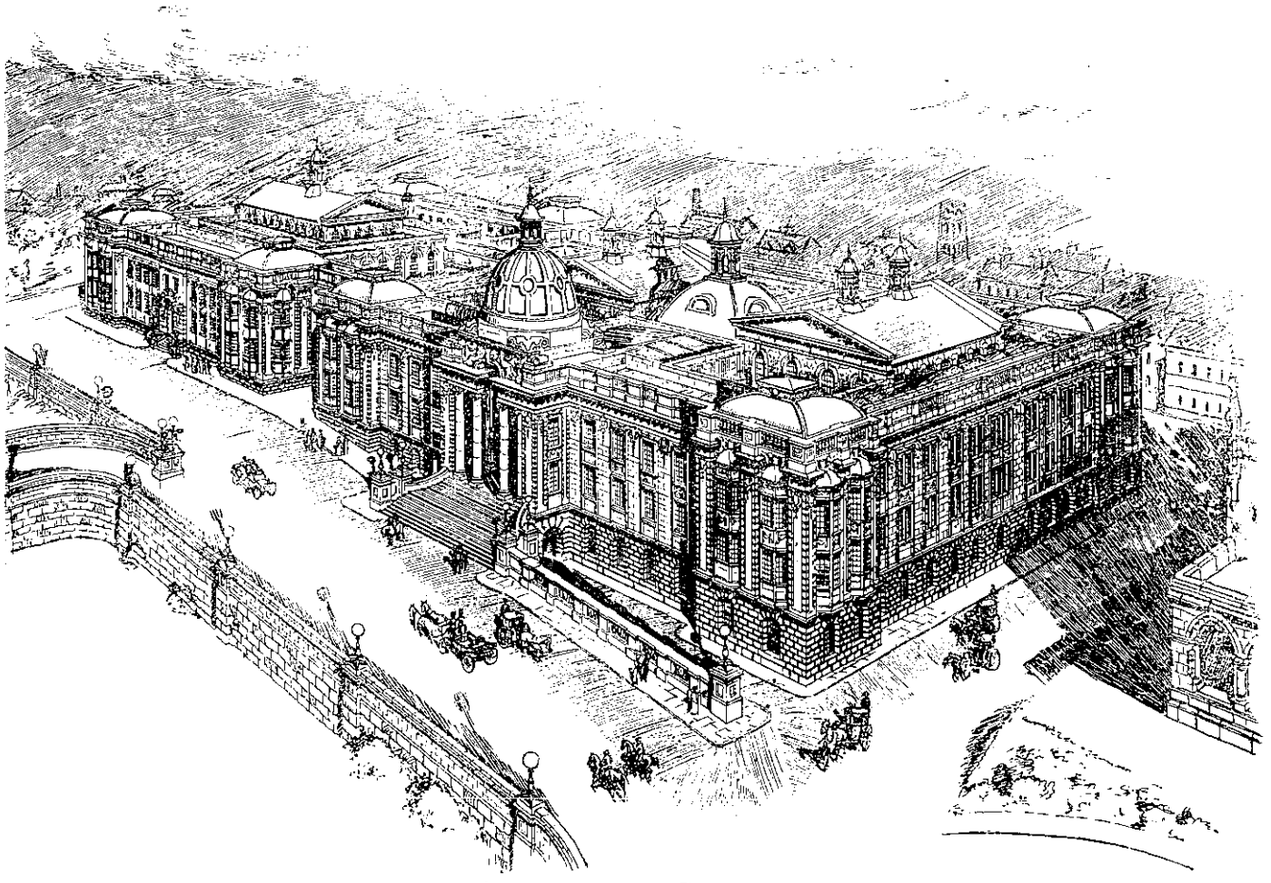
BY J. CHARLESWORTH, F.N.Z.I.A., WELLINGTON



PERSPECTIVE SKETCH

DESIGN

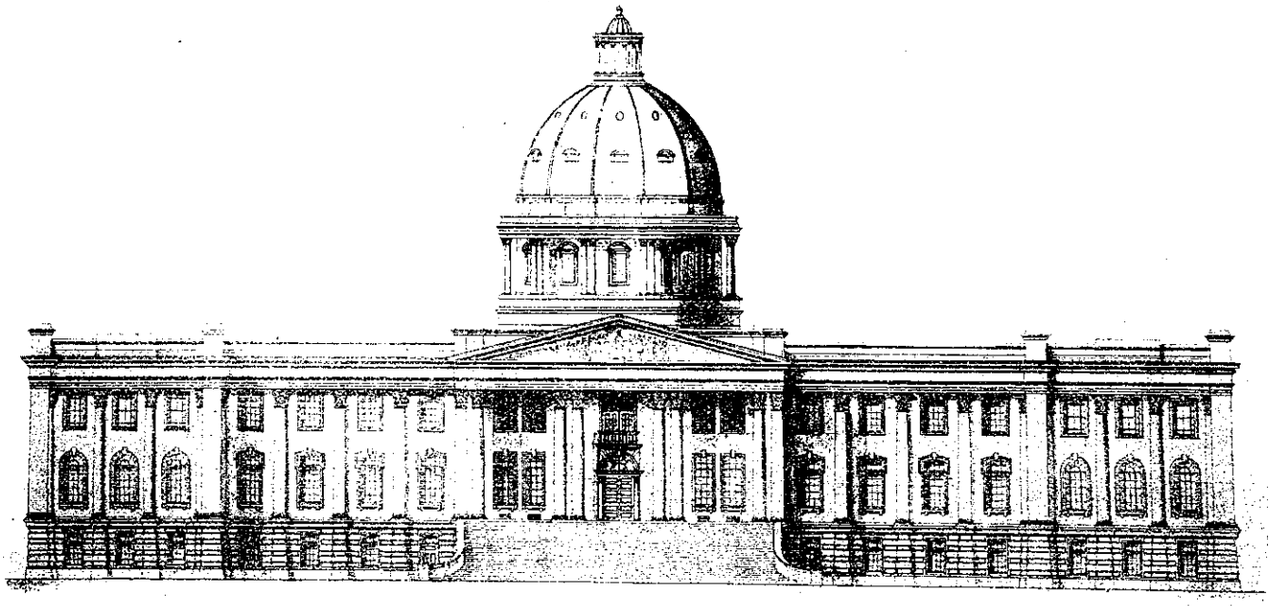
BY MESSRS J. F. SALMOND, F.N.Z.I.A., AND R. N. VANES, A.R.I.B.A., DUNEDIN



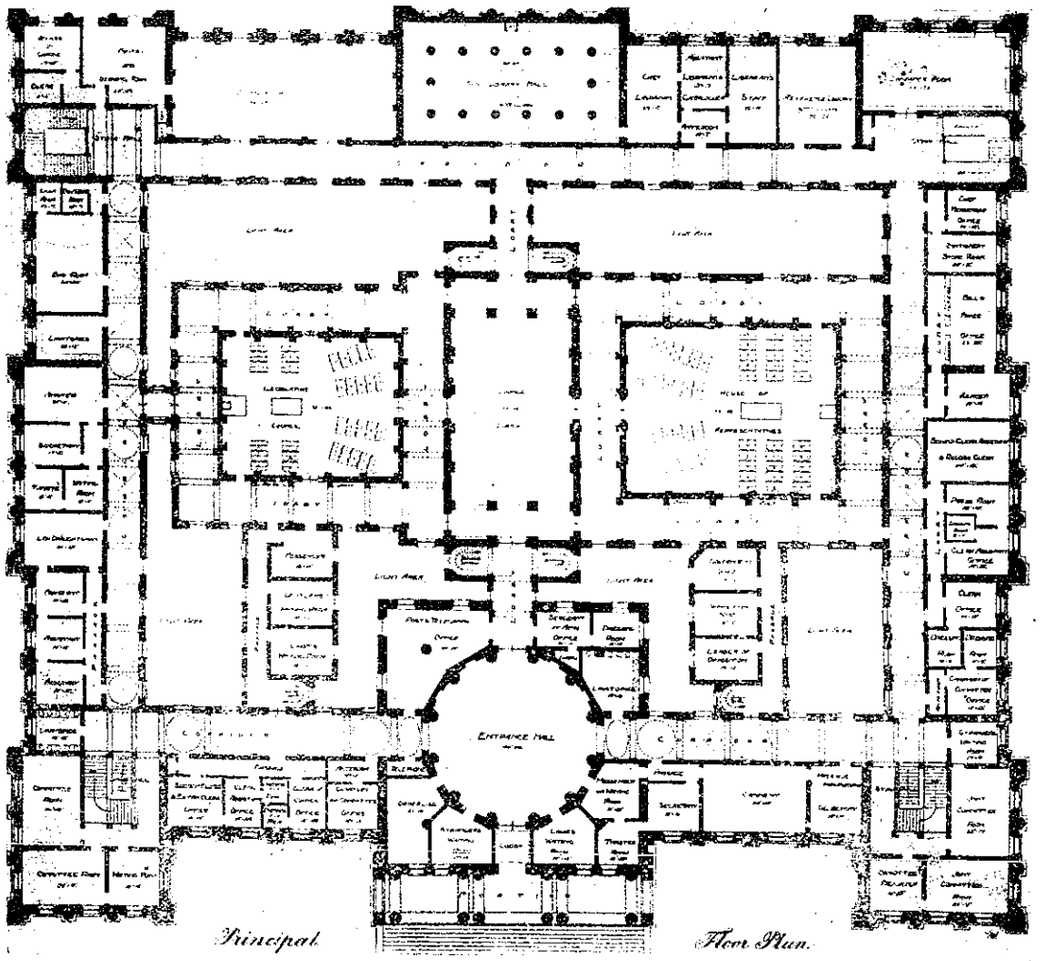
PERSPECTIVE SKETCH

DESIGN

BY O. A. JORGENSEN, PALMERSTON NORTH



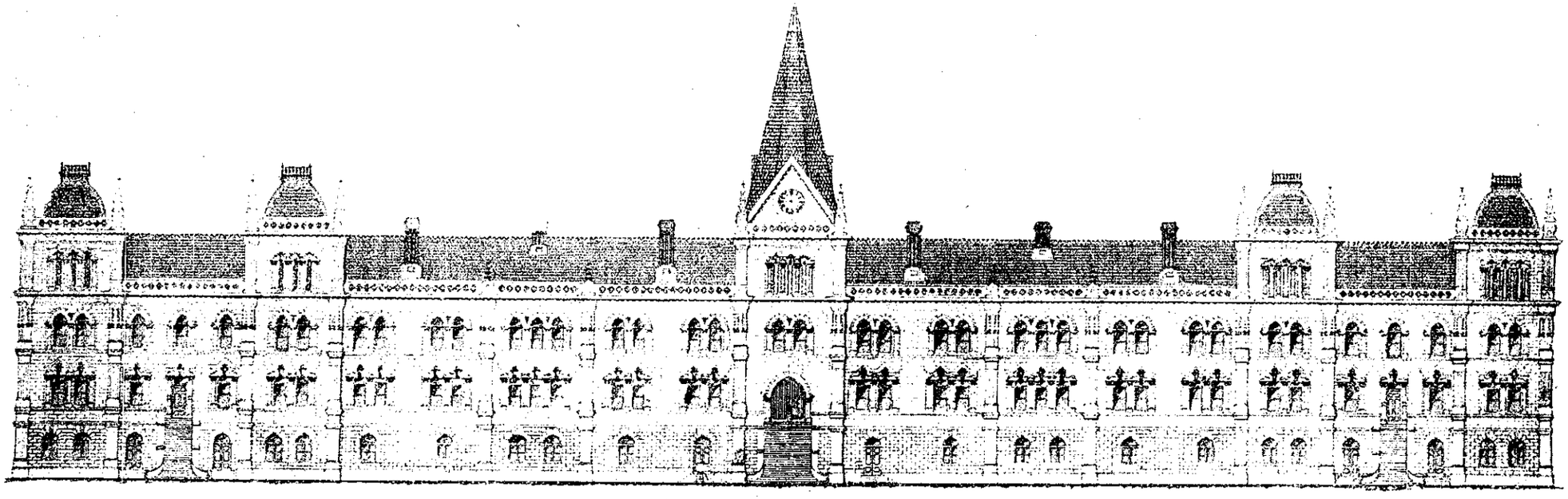
Elevation to Chadlotte Street



Principal Floor Plan.

DESIGN

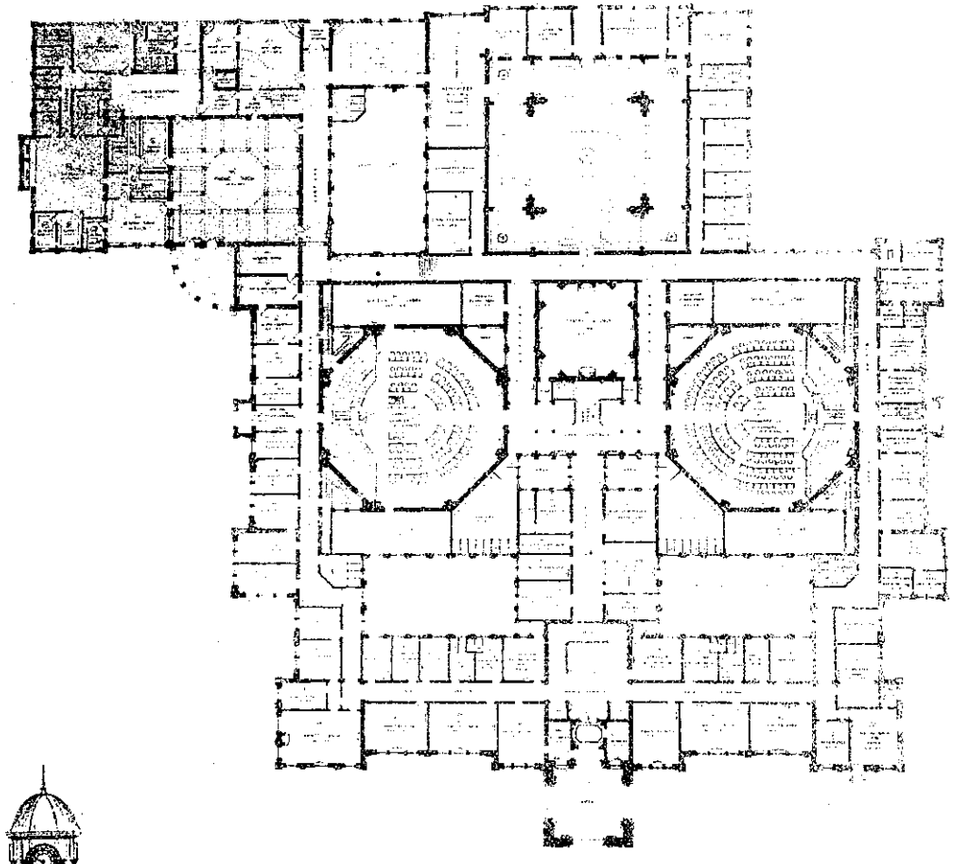
BY ALEX. DOUGLAS SPIERS, PICTON

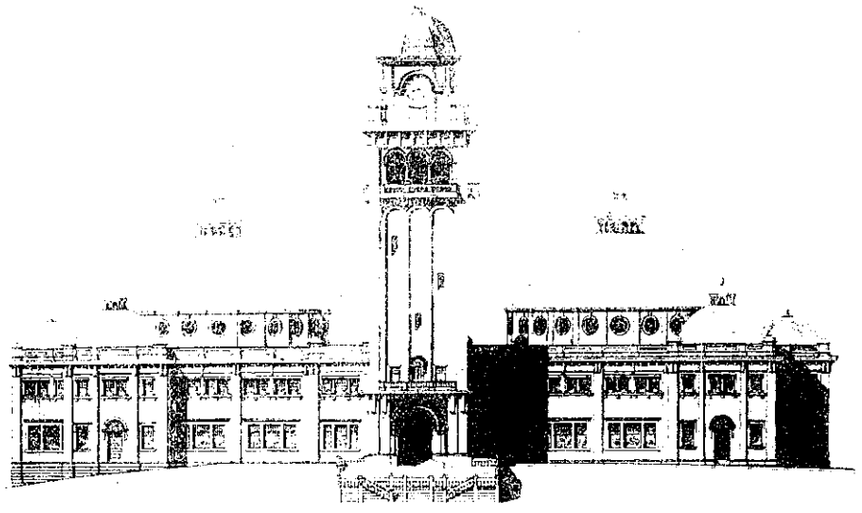


EAST ELEVATION

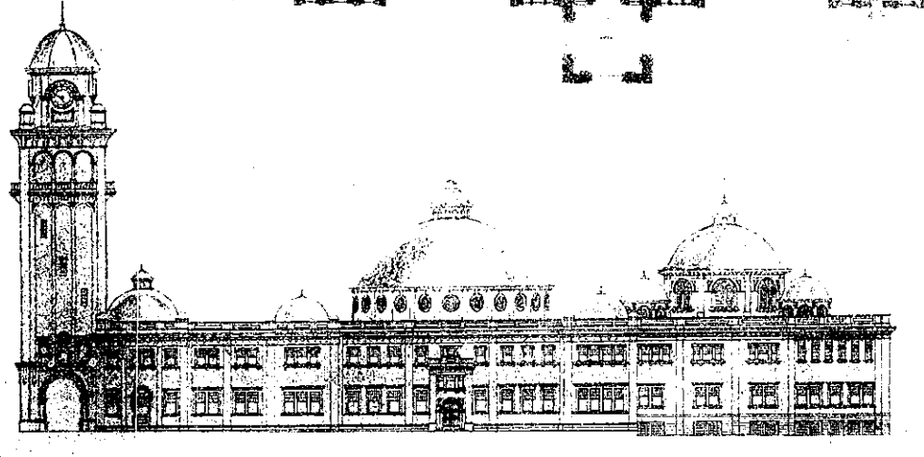
DESIGN

BY MESSRS W. O. BEERE AND J. E. GREENISH, A.N.Z.I.A., WELLINGTON

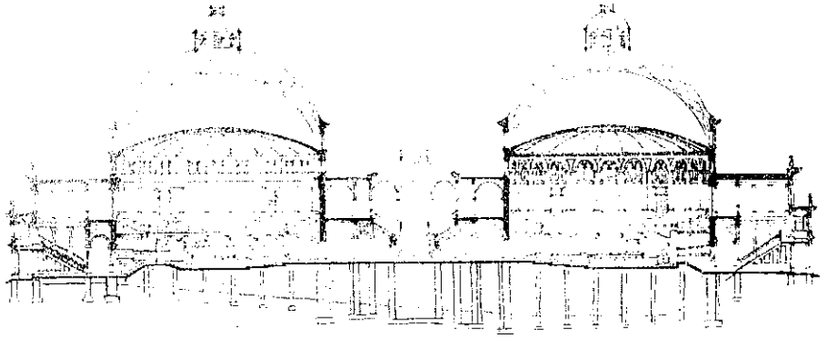




EAST ELEVATION



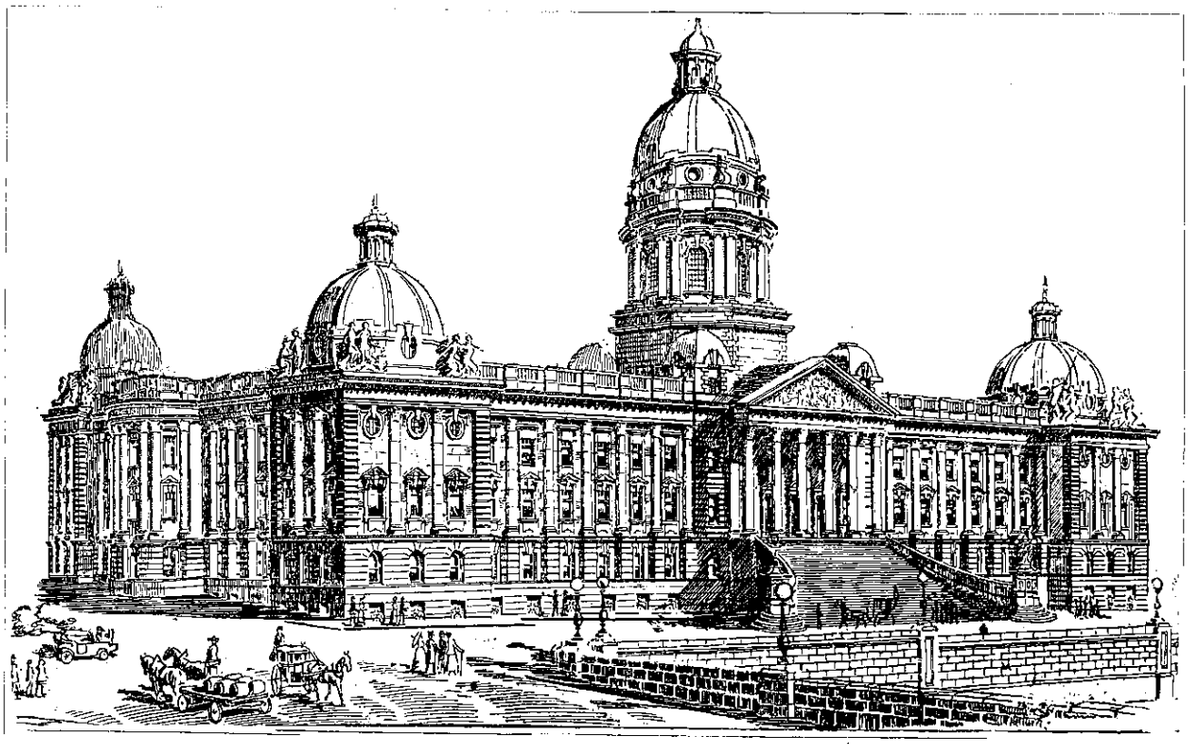
GROUND FLOOR PLAN AND NORTH ELEVATION



TRANSVERSE SECTION

Design

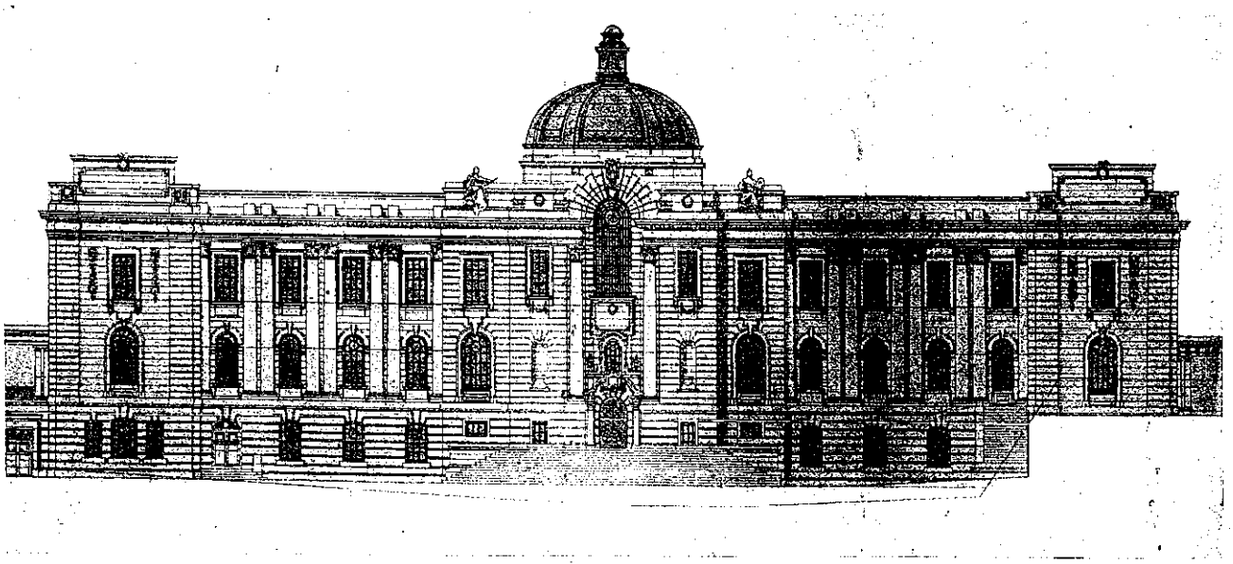
BY J. C. MADDISON, F.R.I.B.A., F.N.Z.I.A., CHRISTCHURCH



PERSPECTIVE

Design

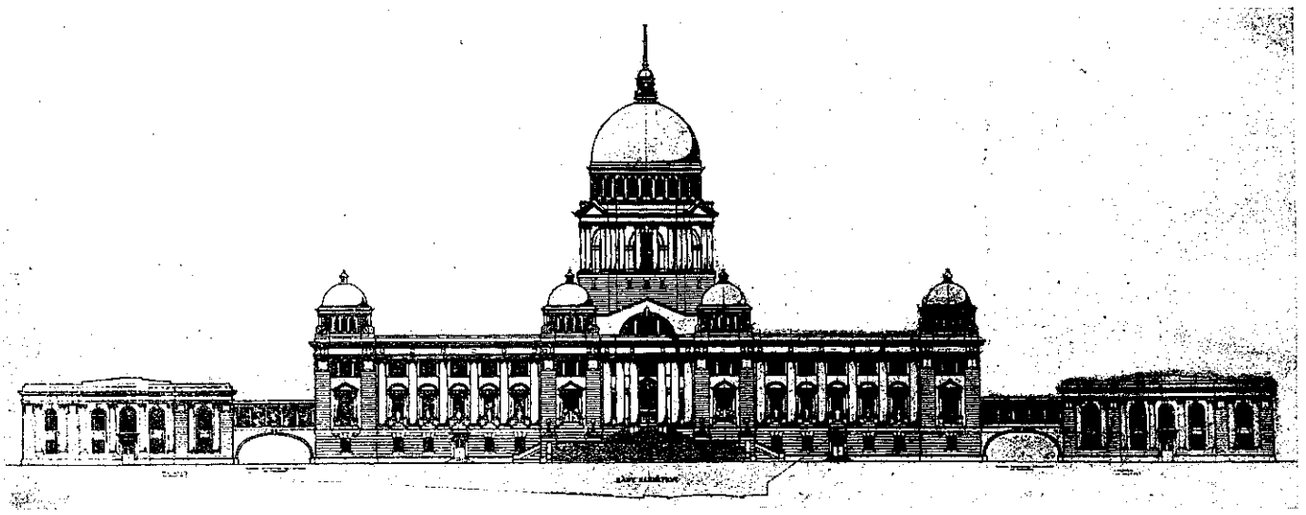
BY WM. HOULKER JUNR., LIC. R.I.B.A., NELSON



EAST ELEVATION

DESIGN

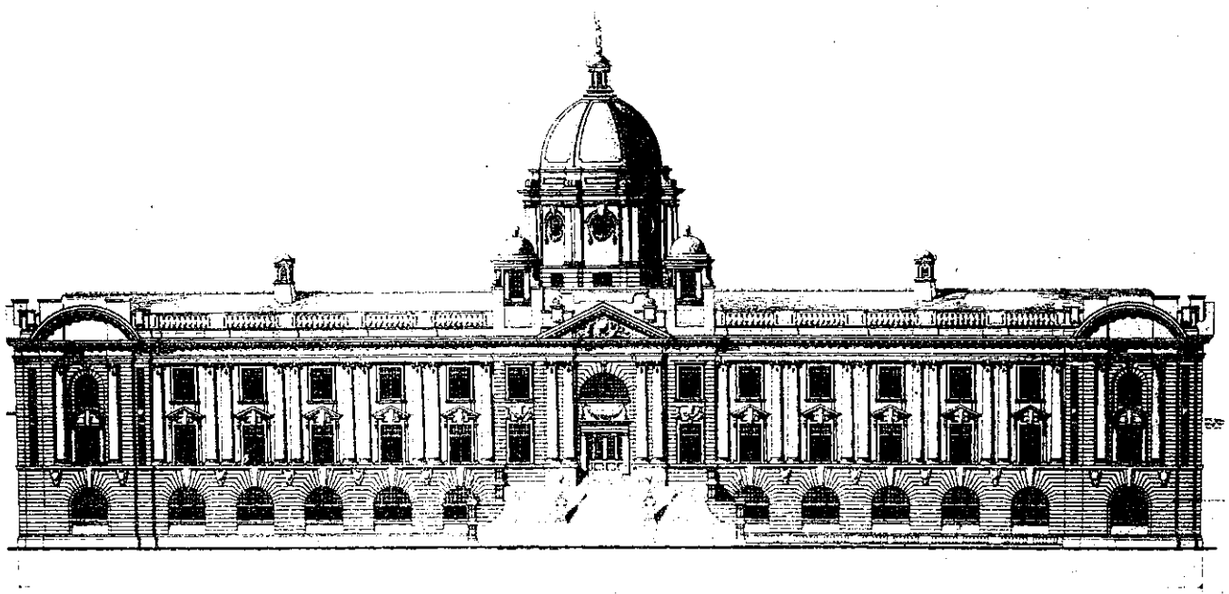
BY LESLIE D. COOMBS, A.R.I.B.A., A.N.Z.I.A., DUNEDIN



EAST ELEVATION

DESIGN

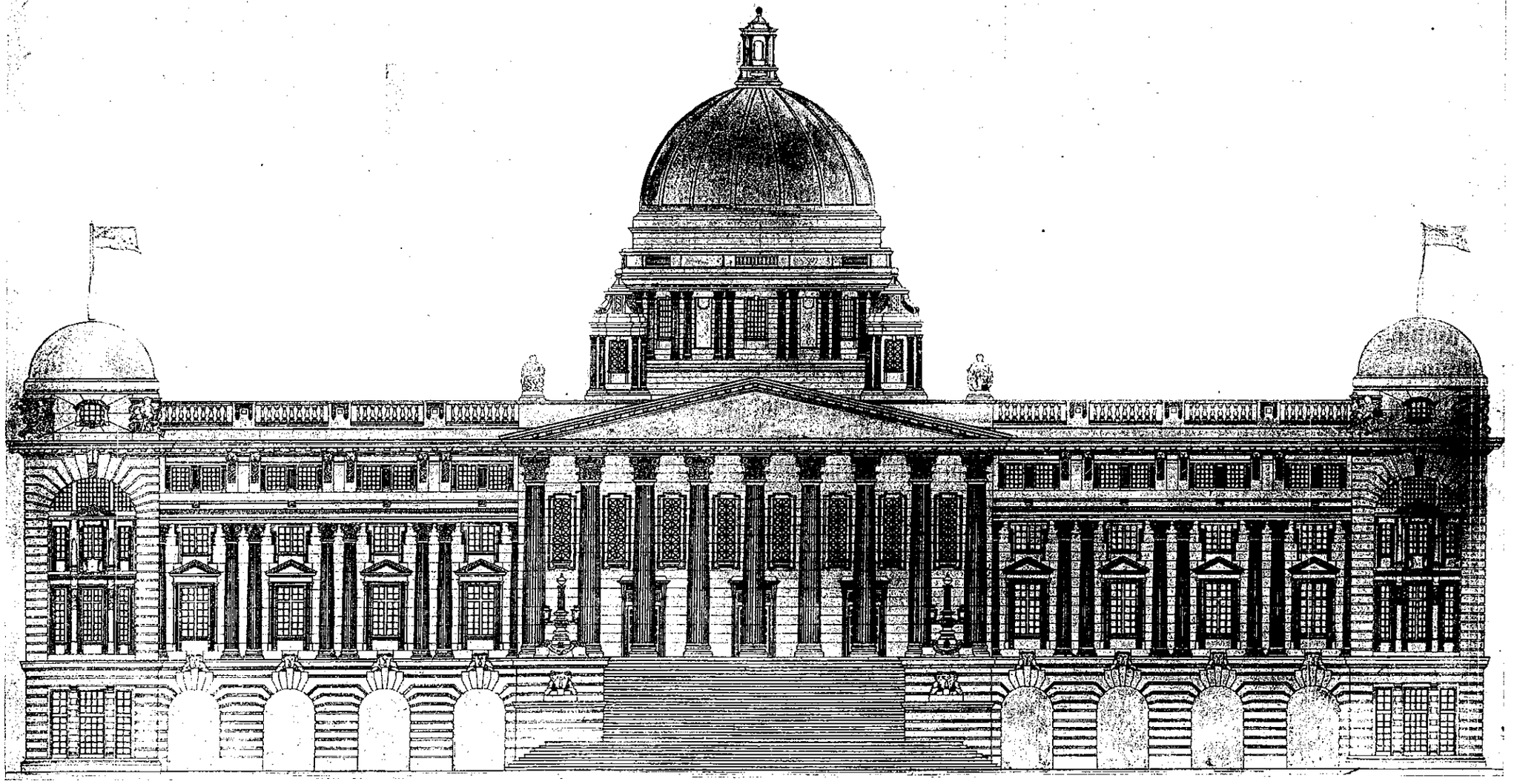
BY ARTHUR S. O'CONNOR AND ALVA M. BARTLEY, AUCKLAND



FRONT ELEVATION

DESIGN (NON-COMPETITIVE)

BY F. ERNEST SMITH, OF HAMILTON



EAST ELEVATION

Yachting and Motor Boats of the Dominion

By Oscar Freyberg

"And then music arose with its voluptuous swell"—

The scene was a very beautiful one. Twisting, turning, and circling round us were the white sails of the Port Nicholson Yacht Club. From underneath the awning erected on the flagship, the s.s. "Tutanekai," we sat at our ease and gazed upon this animated vision. Behind us a band played, whilst over all flew the burgee of the club. It was a beautiful day, wind moderate N.W., and Captain Post had placed his ship, the "Tutanekai," at the disposal of the yachtsmen, and he was ably assisted by Mr. Marsh, the chief steward, and his staff. Anything that these gentlemen could do to make matters run smoothly, they did, and on behalf of all present I once more thank them. At 3 p.m. the tugboat, s.s. "Muritai," left the end of the Clyde Quay wharf for a jaunt round the harbour, with a fair number of passengers on board, and returned at 4 p.m., landing her complement in good order and condition. Tea was served below, in the comfortable saloon, albeit there were so many callers that three or four relays were necessary. The worthy steward might well have been dismayed at such a task presented to him, but he was not; it seemed to tickle him to death. About 4 p.m., or shortly after the Commodore, C. J. Ward, Esq., stepped on board, with the salt sea brine still hanging to his rigging, and in a few well-chosen words declared the season open, amidst the roar of an impatient cannon and the applause of the spectators. The fair sex were present in welcome numbers. Several old yachtsmen were to be seen pacing the quarter deck of the "Tutanekai" mingling with the younger yachtsmen, who came aboard with their Commodore. I noticed members of the crews of the "Siren," "Ethel," "Nancy Stair," "Rawene," "Wairere," "Ngaira," "Tangaroa," "Windward," "Waitangi," and other well-known boats, some of them being represented by fair sailors also. As for the yachts, it would be hard to pick and choose where all looked so well, but the "Waitangi," with her shining yellow decks and graceful black sides, was very prominent. *Per contra* the "White Heather," a study in white, formed a pleasing contrast. The "Nancy Stair" circled about, looking like a graceful white full, with her new sails. That smart little craft, the "Tangaroa," also delighted the spectators, with her saucy little ways, whilst several ladies rose in their anxiety as the "Windward" charged towards us. I think they feared for the safety of the iron plates of the flagship, but she had whisked round and was off on the other tack in a few seconds, leaving us all breathless for the moment; really she is so powerful that boat, she looked just like some vengeful taniwha bent on our destruction, and frightened us so much that we had to leave the deck immediately and drink two cups of tea straight off to recover our equilibrium.

"BOAT 'ARBOUR BILL."

* * *

Messrs. Harvey & Lang, of Customs St. West, Auckland, have just launched a fine cruising launch to the order of Messrs. Gunson & Buttle, of Auckland. She is 35ft. long over all and 8ft. beam. Above the water-line she is painted with white Bon Accord enamel, while the combings of cabin and cockpit are grained in imitation teak, as is the cockpit interior. The name "Taranui," the Maori equivalent for sea bird, is in gold letters on a sunken scroll carved in a dark green headboard on either bow.

The main cabin, which is very roomy, is 11ft. in length, and provides excellent seating and sleeping accommodation. Ventilation is provided by two opening ports and a handsome skylight of teak. The engine room, as is usual nowadays, is forward, and contains the 16 h.p. engine. Ventilation is obtained by four brass opening ports and a hatch, giving easy access to and from the forward deck. This compartment being very roomy, two bunks forward of the engine are provided.

The cabin is painted with white Bon Accord and upholstered in Rexine leather, the floor of both engine room and cabin being covered with linoleum. She is installed throughout with electric light. There are four lights in the main cabin, two in the engine room, one portable in cockpit, and side and masthead lights. She has a mast and sail, and is altogether a completely equipped and satisfactory seagoing cruiser.

Harvey & Lang have on the stocks a 38ft. working launch for Mr. J. H. Faulkner, of Tauranga. She is to be engined with a 16 h.p. Standard, and will be in many respects similar to the popular "All Black," constructed some time ago by these builders. The engine room is forward, under a house giving 6ft. headroom, where there are sleeping and cooking arrangements for the crew, as well as the usual engine-room appointments. Aft of this is the control house, with glass shutters to open or close, to protect the man in charge in bad weather. Aft again for 19ft. is passenger accommodation seating 20 persons under a standing roof with open sides, which, however, have canvas weather cloths which can be dropped in bad weather, converting the passenger accommodation into a cosy saloon with 6ft. headroom. She will be ready for launching before Christmas, and will proceed under her own power to Tauranga.

This firm have also on the stocks a fine trunk cabin cruiser to the order of Mr. R. Watson, of Waiheke. She is 28ft. x 7ft. 3in. x 2ft., and will be engined with a single cylinder 7½ h.p. Regal. Her accommodation shows an engine room forward, with cooking arrangements, cabin 9ft. long, upholstered in leather. Headroom is 5ft. The cockpit is 7ft. long. This is a sensible little vessel, and is being faithfully constructed of good material.

Another craft this firm have under construction is a 25-footer, for a resident of Russell, from the board of Mr. W. Sinton, of Sinton & Fisher. She is only just in frame, and as I shall be showing a plan of her, with a description, later on, there is not much to be said about her now, except that she is to be engined with a 5 h.p. double cylinder Niagara, for which Messrs. Sinton & Fisher are sole N.Z. agents.

Amongst their larger work Harvey & Lang have supplied a 12ft. pleasure boat to the West End Rowing Club, and three similar boats for Lake Takapuna

Astronomy.

Astronomical Notes for December.

BY THE HON. DIRECTOR, WANGANUI OBSERVATORY.

The Sun is in the Constellation Scorpio till the 19th, when he enters Sagittarius. His southern declination increases till the morning of the 23rd; the Summer Solstice occurring at 10h. 24m. a.m. of that date. This is the longest day, the date varying according to the moment when the Sun, reaching his greatest southern declination, is contained in the day at the place of reckoning.

Sun Spots have practically vanished from the solar surface for the time being. People who delight in charging all extreme of weather to the effect of sunspots, will now be at a loss to know where to lay the blame.

The Moon, in her monthly circuit of the heavens, comes into the vicinity of the planets and some of the brighter stars, and serves as a convenient pointer to them. She will be near Saturn on the evening of the 4th, Mars, and close to this planet, on the 5th, Venus on the morning of the 17th, Jupiter on the 19th, Mercury on the 21st, and Uranus on the 23rd. Her path through the Constellations visible in our evening skies, at about 8 p.m., is as follows:—In her second quarter in Aries on the 1st to the 4th; Taurus on the 5th and 6th; Gemini on the 7th and 8th, after which she rises late in the evening. She will be seen as a crescent in Capricornus on the 23rd and 24th, Aquarius on the 25th to the 27th; Pisces on the 28th to the 30th; and Aries again on the last night of the month.

Phases of the Moon in New Zealand mean time:—

Full Moon	.. 6 days	2 hrs	22 min. p.m.
Last Quarter	.. 13 days	5 hrs.	16 min. a.m.
New Moon	.. 21 days	3 hrs.	17 min. a.m.
First Quarter	.. 29 days	6 hrs.	17 min. a.m.
Perigee	.. 7 days	0hrs.	30 min. p.m.
Apogee	.. 22 days	1 hr.	36 min. p.m.

Mercury is an evening star at the beginning of the month in the Constellation Sagittarius. His path is to the east amongst the stars. He will be in conjunction with the star Lambda Sagillarii on the evening of the 7th; at greatest elongation east on the following evening

20.9 deg. angular from the Sun's centre; stationary amongst the stars on the evening of the 16th; in conjunction with the Moon on the evening of the 21st; in perihilion on the 23rd; and in inferior conjunction again on the 26th.

Venus is a morning star during the month, moving back towards the Sun's place. She will be in perihelion on the 11th; in conjunction with the Moon on the 17th, to the north of our satellite. She is now a splendid object in the early morning sky, and a most interesting one in the telescope at this time.

Mars is now past opposition, but is in a better position in the early evening sky than during November, as he is nearer the Meridian, and his greatest altitude at an earlier hour. He cannot be mistaken, as he now shines so brightly and with such a ruddy tinge just to the right of the Pleiades. He is not well placed for southern observers at this opposition, as he is nearly 22 deg. to the north of the celestial equator, and at Wanganui has only an altitude of 28.3deg. As a result, combined with the indifferent weather of the last few weeks, no good views of his surface markings have yet been obtained. He will be in conjunction with the Moon on the 5th, and stationary amongst the stars on the 30th.

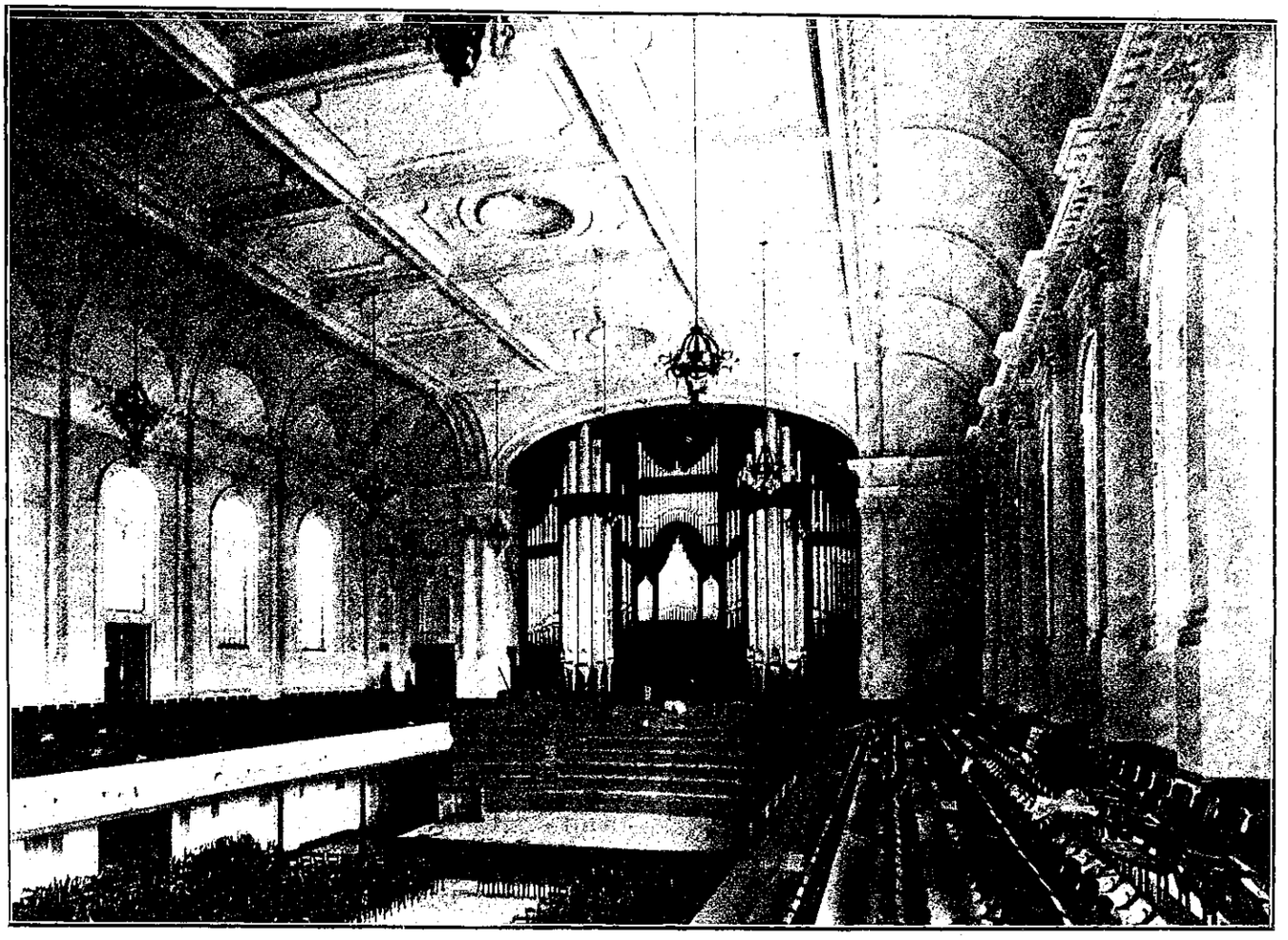
Jupiter is now a morning star in the Constellation Libra, emerging from the Sun's place. He will be in conjunction with the Moon on the 19th.

Saturn is now sharing with Mars the honours of the evening skies. He is to be found in the Constellation Aries, to the left of, and above the position of Mars, shining with a steady yellowish light. His ring system is now most interesting, and his greater altitude gives clearer images in the telescope, under high powers, at this time. No one should miss seeing this, the most interesting of all the planetary bodies. He will be found to the South of the Moon on the 4th.

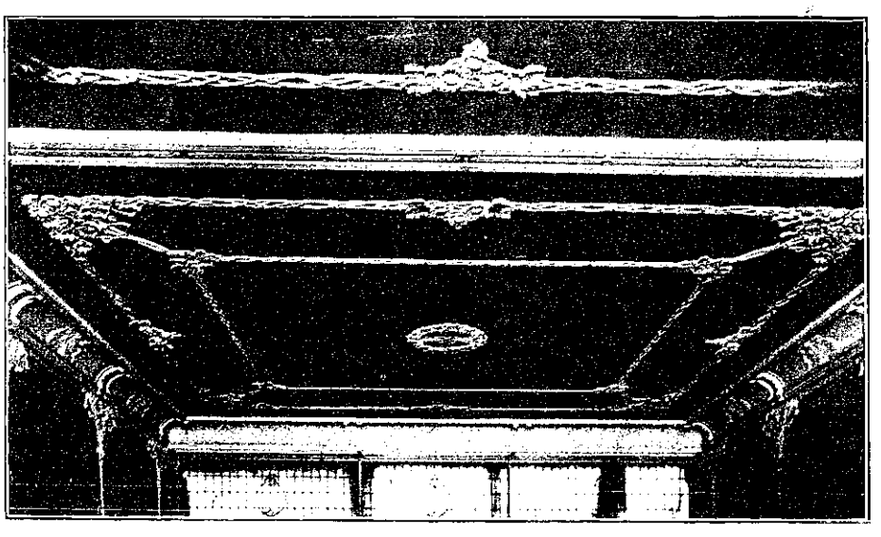
Uranus is still an evening star in Sagittarius. He will be in conjunction with the Moon on the 23rd.

Neptune, in the Constellation Gemini, is an evening star. He will be in conjunction with the Moon on the 9th, when our satellite will pass five and three-quarter degrees to the north of the planet.

Meteors may be looked for from Gemini, from about the 4th to the 10th of the month; also from Taurus during the earlier part of the month.



AUCKLAND TOWN HALL. CEILING BY CARRARA CEILING CO., LTD., WELLINGTON.



PETERSON'S LTD., CHRISTCHURCH, showing Ceiling by Carrara Ceiling Co., Ltd., Wellington.

Our Illustrations.

In this issue we produce some very fine plates showing the plaster ceiling work of the new Town Hall at Auckland, the ceiling of Messrs. Petersen's, Ltd., new shop, Christchurch, and three drawing room ceilings. These should be particularly interesting to architects and builders, also to all who contemplate building or renovating. The drawing-room ceilings shown are all in free design, thus illustrating the latest work in new art ceiling decoration, as designed, manufactured and carried out by the Carrara Ceiling Co., Ltd. This enterprising Company now has works at Auckland, as well at Wellington, and from these centres, they undertake contracts in any part of New Zealand.

MR. G. W. SHIRTCLIFFE'S DRAWING ROOM, WELLINGTON, showing Carrara Ceiling.

BUILDING NOTES.

WELLINGTON.

The following building permits have been received and approved by the City Engineer:—

From 17/10/11 to 31/10/11.—20 applications for permission to erect; 25 were examined and approved.

City district, £1650; Melrose district, £4167; Northland district, £480.

From 31/10/11 to 14/11/11.—24 applications for permission to erect; 24 were examined and approved.

City district, £15,810; Melrose district, £6110; Wadestown district, £250.

From 14/11/11 to 28/11/11.—31 applications for permission to erect, and 30 examined and approved.

City district, £1240; Melrose district, £5030; Northland district, £103.

Among the above recently examined and approved are to be noticed.—Additions and alterations in Willis Street to provide for a continuous picture theatre for W. F. Shortt, Ltd., and a theatre in Willis Street for T. Coverdale; dwelling in Hay Street for G. Colvin; dwelling in Rata Road for F. Brattle; dwelling in Tainui Terrace for A. Edgington; dwelling in Waipapa Road for R. W. Lauchlan; residence in Hataitai Road for Mrs. J. Hall; destructor in Constable Street for the Wellington Timber Co.; additions in Willis Street for Blundell Bros.; dwelling in Onepu Road for Easson Bros.; shop and dwelling house in Mersey Street for H. T. Harper; dwelling in Upland Road for P. McKenzie; dwelling in Paroa Road for W. J. Dunn; dwelling in Kainui Road for S. Stevens; dwelling in Adelaide Road for G. Coleman; dwelling in Waipupa Road for W. McGoldrick; dwelling in Seatoun Road for S. Salek; additions in Karori Road for S. E. Pourie; additions in Hawkestone Crescent for J. Swindale.

A sum of £3750 has been allocated to the Public Works Department by the Cabinet for the erection of a workshop and stores.

Plans are being prepared for a new building to accommodate the out-patients work for the Hospital Board.

The City Council has authorised the building of a ladies' dressing shed at Evans Bay. At the junction of Lyall Bay and Kilbirnie tramway sections a waiting shed is to be erected. The construction of public baths for Brooklyn is to be considered, and the sum of £750 is to be put on next year's estimates for the same.

His Majesty's Theatre is to be at once demolished to make place for the erection of a new structure.

Messrs. W. T. Edwards & Son, of Wellington, are the accepted tenderers at £455 for the supply of marble work for the Wellington and Auckland Post Offices, the unsuccessful ones being Jonsten & Murie, £499, and Mayes & Vass, £697.

MR. H. P. RAWSON'S DRAWING ROOM, WELLINGTON, showing Carrara Ceiling.

MR. T. ARCHIBALD'S DRAWING ROOM, WELLINGTON, showing Carrara Ceiling.

Mr. John Wood is the accepted tenderer at about £1260 for the erection of a hall at Khandallah for the Onslow Borough Council. The unsuccessful ones were: W. H. Ninnie, £1293; T. Page, £1300; Meyer & Illingworth, £1367; J. C. Brown, £1423; Norling & Quinn, £1429; and H. H. Knight, £1439.

Taihape is to have commodious Government buildings built there.

Wanganui is to have a new Opera House built shortly of cemented cement.

AUCKLAND.

The question of obtaining carpenters and bricklayers is still engaging the serious attention of all employers, and some large salaries are being offered to secure the same. We learn that in some instances as much as 14s. a day is being paid, and small builders are even asking the assistance of larger employers and offering a still higher figure. This absence of capable workmen will be even more noticeable when the large amount of plans now being prepared by the Auckland Education Board's architect comes forward, as we understand it will amount to about £10 000, which is nearly equal to what is already in course of construction or being tendered for.

Messrs. Wade & Wade have prepared plans, which it is estimated will cost £4500 to execute, for a three-storeyed warehouse, which will be fitted up in the most modern and up-to-date style, for Messrs. Fairburn, Wright & Co., on account of the great increase in their business.

HAWKE'S BAY.

For the erection of the Maori Agricultural College at Hastings, the tender of Messrs. W. M. Hay & Sons, of that town, has been accepted at £7900.

CANTERBURY.

From reports received Ashburton and Timaru are both busy centres just now of the building trade, and at the former two Christchurch firms have contracts in hand, as well as the majority of local builders being fully engaged. The buildings in course of erection there exceed the sum of £20,000, in which is included the new theatre costing about £5000, with Mr. F. J. Barlow architect, and Messrs. Maynard Bros contractors, of Christchurch. A new Bank of Australasia, at about £3000, where Messrs. Gregg & Co., of Christchurch, are the contractors, and extensive alterations to the N.Z. Farmers' Co-operative Association's buildings, at about £6000, with Messrs. England Bros. architects, and Messrs. Jas. Smith & Sons contractors. At the latter town (Timaru) bricks seem to be very scarce, which, considering the great activity, is much to be regretted. Christchurch had the foundation stone of the new Government Buildings laid by Sir Joseph Ward the other day, which will cost about £60,000, and are to be erected in Cathedral Square, on a site which cost £20,000. We also learn a hospital is to be built at Addington and a tower put to the Post Office at the same place.

Mr. H. E. Vincent, of Ashburton, reports that he has let a contract for the new Technical School, in brick, to Mr. Wm. Reid, at £2472; also a small church for the Methodist Church at Methven is now nearing completion by the contractor, Mr. W. E. Olsen; a cottage for the executors of the late F. R. Flatman, Esq., a motor garage for Thos. Bullock, Esq., are both approaching completion by Mr. W. Reid, contractor. Sketch plans have also been prepared for a new Methodist parsonage, new offices for Thos. Bullock, Esq., and additions to Mr. R. D. Johnson's garage.

MARLBOROUGH.

This district is shortly to be the scene of much activity in the building trade. With its drainage scheme, costing about £65,000, and a new Hospital, Post Office, Theatre, Town Hall, improvements amounting in the aggregate to about £22,000; Wairau bridge, £12,000; River Board grant of £5000; New Bank, new Club, etc., Blenheim seems to be the centre of the scene of operations, and we trust supplies will be equal to the demand, both in materials and labour, so that this go-ahead district may not be hampered in its improvements.

OTAGO.

Mosgiel is to have a new building for its Town Hall and Municipal Offices, built in brick, and two-storeyed, of which Mr. E. W. Walden, of Dunedin, is the architect. It will have library and reading rooms on the ground floor, and Council Chamber, large committee room, and Mayor's room, etc., upstairs. The large hall will be 64ft. x 50ft., and have a good stage, with dressing rooms, kitchens, etc., behind, and above it living rooms for the caretaker. The frontage is plastered on the lower storey, and the upper will be in pointed brick with a handsome portico over the entrance.

The Dresden Piano Co. at Dunedin are having plans prepared for a five-storeyed building, with frontage to Princes Street, by Messrs. Salmond & Vanes.

SOUTHLAND.

It is reported that the alterations and additions to the Colonial Buildings have now been definitely arranged, and that Messrs. Walker Bros. have signed the contract for the same at about £3300. The alterations provide that the entrance to the upper storey shall be in Dee Street, the present frontage continued in stone, and the ugly gap, which has been such an eyesore, facing the Post Office, is to be filled up; these sort of alterations do much to improve the already impressive city of Invercargill.

TENDER NOTES

For the erection of an additional five rooms to Admiralty House. Plan, specification and conditions of contract may be seen at the office of the Board's architect, Alex. Wiseman, Esq. Tenders to be endorsed, "Tender for Additions to Admiralty House." The lowest or any tender not necessarily accepted. Tenders close Dec. 5. H. B. Burnett, secretary, Auckland Harbour Board.

For the supply of 10,000 Native Sleepers for the North Auckland Railway, in lots of 50 upwards, delivered at any station on this railway, up to Maungaturoto. Specifications may be seen at Post Office, Dargaville, and Public Works Offices, Auckland, Hamilton, Te Kuiti, and Kaiwaka. No tender necessarily accepted. Tenders close Dec. 15. J. A. Wilson, district engineer.

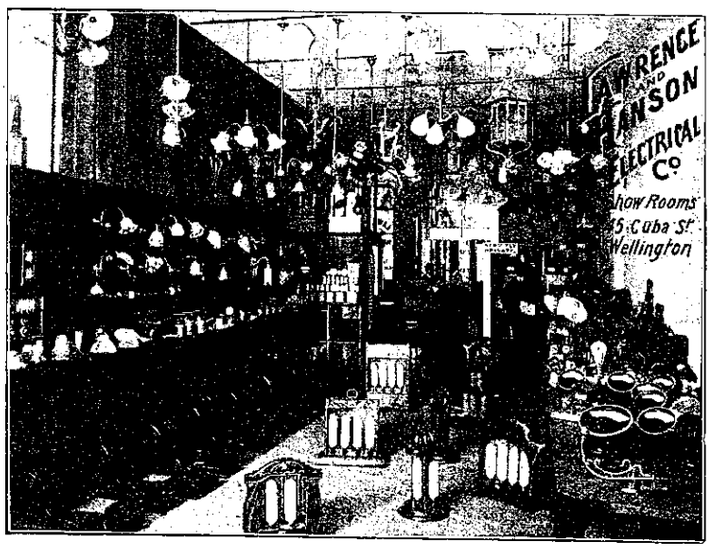
For the supply and delivery at Dargaville of Ironbark piles and Hardwood timber for bridges on the Kaihu Valley railway. Specification, schedule, and conditions of contract may be seen at the Public Works Offices, Auckland and Wellington, and at the Post Office, Dargaville. Tenders close Dec. 15th at the Public Works Office, Wellington. R. W. Holmes, engineer-in-chief.

Painting and repairs to the school buildings at Lyttelton West, Rapaki, Governor's Bay, Opawa, Redcliffs, Spreydon, and Greenpark, and for

APPLIED ELECTRICITY.

The illustration on this page will doubtless attract the attention of our readers by reason alike of its variety and comprehensiveness. The Lawrence and Hanson Electrical Company, whose headquarters in New Zealand are at 45 and 47 Cuba Street, Wellington, dates from the year 1886, when the business was founded in Sydney and Melbourne. In 1909 Mr. H. F. Vickery, A.M.I.E.E. (London), the Manager, came over to establish the local branch, and the Company's operations now extend throughout the entire Dominion.

The marvellous advance in the application of electrical energy to the varied needs and requirements of modern life has rendered it possible to utilise this unseen but powerful force in a greatly increased variety of ways. Its cleanliness, its regularity, the ease with which it can be brought into requisition and the reasonableness of the cost all combine to constitute electricity a most popular agent for all purposes to which it has already been applied. The future will, doubtless reveal many other methods of adapting the subtle fluid to the use and benefit of the human race. The picture gives a portion only of the extensive showrooms of the Lawrence and Hanson Electrical Company, and a small idea only is given of the extent of the stock carried at the New Zealand branch. A large number of electric motors are included in the stock, and these can be supplied from one-tenth h.p., for driving household, sewing, and other machinery, to 10 h.p. for factories. There are Dynamos, also, of varied sizes, from one kilowatt to ten kilowatts capacity, for generating energy available for lighting, heating, cooking and other purposes. Motor Car accessories, including accumulators, magnetos, sparking plugs, and high and low tension flexible wire, are also kept in stock. Electric Radiators, in chaste and artistic designs, worked in hand-beaten, oxidised copper, in form either circular or straight, and fitted with four lamps and two switches, so that either two or four lamps may be used at once, are displayed. The XCELL dry baterics constitute one of the finest dry cells on the market, and are largely in use in the Post and Telegraph Department. Another special line is insulating tape, which is used in large quantities throughout Australasia for joints, etc. Generally the Company maintains extensive stocks of all kinds of electrical fittings, lamps, and including a large stock of the well-known "Brimsdown" metallic filament lamps, telephones, and cables, in addition to others already named. Although in Australia the Company are large contractors, the business in New Zealand is confined only to the wholesale trade. It is of general interest to note that the Wellington City Corporation has recently let a contract to the Lawrence and Hanson Electrical Company for supplying plant in connection with the extension of the water supply. At Roseneath a 64 brake h.p. motor, direct coupled to a six inch six stage high lift centrifugal pump, capable of delivering 300 gallons per minute against a total head of 378 feet, is being erected. The same power motor is to be used at Melrose, coupled to a six inch five stage pump equal to 350 galls per minute, at a height of 232 feet, and at Wadestown a motor of 150 h.p. will operate with a seven inch seven stage appliance capable of lifting 500 gallons per minute against a total head of 555 feet. High level residents next summer should therefore never suffer a water famine. The above not inconsiderable list of supply seems an ordinary thing, because the various items are familiar now as household words. Even from that point of view the list is remarkable, for where else will you find so many for dealing with all work from the colossal department which pumps water supplies for large populations, to the driving of the smallest labour saver. The point is that the list is really an epitome of the electric history of the world



THE LAWRENCE AND HANSON ELECTRICAL CO., WELLINGTON.

The Company are Agents for the Hart Accumulator Co. of England; Venner Time Switches, Ltd., England; Glover's Cable Co., England.

additions to the woodwork room at Lincoln School. Plans and specifications at the office of the Board Normal School, and also at the respective schoolhouses. Tenders close Dec. 5.

For the erection of a Bell Tower, St. Paul's Church, Papanui. Drawings and specification may be seen at my office up till Monday, 11th December, 1911. Cyril J. Mountfort, architect. 8 and 9 Dalgety's Buildings, Cathedral Square, Christchurch.

For malthouse and kiln (brick), for the Crown Brewery Co., Ltd., Antigua Street, Christchurch. Plans and specifications at our office. The lowest or any tender not necessarily accepted. Tenders close Dec. 8th. S. and A. Luttrell, architects, "Times" Chambers, Gloucester Street, Christchurch.

Open Competitions.

Ministerio de Obras Publicas, Montevideo, will give particulars of two improvement schemes, Montevideo. Prizes offered, £1060, £640, £425; close January 30th, 1912.

Also for Government Palace, Montevideo. Prizes offered: £2125 and £850; close January 30, 1912.

Mr. King O'Mally, Minister of State for Home Affairs, Commonwealth of Australia, Melbourne, will give particulars of laying out Federal capital city, Yascamberra. Prizes offered: £1750, £750, £500; close January 31, 1912.

The Auckland City Council are asking for competitive designs for the new branch library in Upper Symonds Street. A sum of £3000 was voted in July last by the city ratepayers. A prize of £50 is offered as first prize, and £20 as second. It is probable the winner of the first prize will be engaged as architect, and if so, the premium will be merged in the commission. It is hoped the President of the Auckland branch of the N.Z. Institute of Architects will judge the designs, at any rate the Library Committee will seek the advice of a recognised leading architect in judging the designs. The competition closes January 1st.

Engineering Notes.

A resident engineer is required by the Bluff Harbour Board at a salary of £450 per annum. Applications must be in by Dec. 18.

Representatives are required in New Zealand by a leading English Company, who manufacture steam turbines, high-speed engines, electrical generating and distributing machinery, etc. Well established engineering firms or machinery importers will have the preference. Apply to Box 665, Horncastles, Cheapside, London, England.

Messrs. Briscoe & Co., Ltd., are the accepted tenderers, at a cost of £877 7s. 8d., for the supply of fittings for the Bell Road Reservoir for the Wellington City Council. The following were unsuccessful:—Messrs. Richardson, Blair & McCabe, £904; J. Duthie & Co., £908 and £1020.

Messrs. Griffiths & Co., Birchfield (Nelson), are the accepted tenderers for the construction of a bridge on the Gisborne-Motu railway, at a cost of £1034, for the Public Works Department. The unsuccessful ones were:—Anderson & Co. (Christchurch), £1097; Saunders Bros. (Wellington), £1153; Niven & Co. (Napier), £1226; and T. H. Adams (Auckland), £1378.

For the construction of a water tunnel, about 7100 feet in length from Lake Coleridge to the Rakaia River. Plans at Public Works Offices, all centres. Tenders close Dec. 15, with Minister for Public Works, Wellington.

For the construction of traffic bridge over the Wainpu River, near Port Awanui, for the Waiapu County Council. Plans, etc., at Public Works Offices, Wellington, Napier, Gisborne, Auckland; tenders close December 6th with W. O'Ryan, engineer, Waiapu County Council, Waipiro Bay.

For electric Tramways, Lighting and Power Supply for the borough of Napier. Contract No. 2.—Permanent way, road, and sewer alterations, overhead construction and supply mains. Contract No. 3.—Power station, car shed, and repair shop equipments. Contract No. 4.—Rolling stock. Conditions, specifications, drawings and bills of quantities may be seen at the Corporation Offices, Napier, and at the office of Mr. F. Black, 41 Ballance Street, Wellington. Copies may be obtained from the undersigned only, upon payment of £5 5s. per set for each contract, which sum will be refunded upon

return of the set accompanied by a tender in proper order. Tenders close at my office on February 7, 1912. M. Murray, Town Clerk, Napier.

Poerua Gold Mining Co. require two large filter tanks and three 10ft. by 30ft. agitators. Tenders close Dec. 9.

For the supply and erection of suction gas pumping plant at the pumping station, Beckenham, Christchurch; close January 29th. H. R. Smith, Town Clerk, Christchurch.

For formation works (five contracts) on the Westport-Inangahua Railway. Specification, etc., may be seen at the Public Works Offices, Wellington, Nelson, Westport, Greymouth. Tenders to be addressed to the Minister for Public Works, Wellington, by Dec. 5th.

For repairs to Caisson, Calliope Dock, Auckland; close Dec. 5. Tenders to Chairman, Auckland Harbour Board.

For the supply of cast-iron water mains, valves, specials, etc.; close on December 14 with Henry W. Wilson, Town Clerk, Auckland.

For the supply of steel water-pipes and earthenware drainage pipes; close Dec. 5 at Town Board's office, Kaponga. Specifications at the office and "Herald" office, Auckland H. W. Climie, engineer.

For the construction of a Service Reservoir and Pumping Station, and for laying about 11 miles of 9in., 7in., and 4in. cast-iron water mains with valves, fittings, etc. Drawings and specification with Henry H. Metcalfe & Son, Palmerston Buildings, Auckland. Tenders close with the Town Clerk, Birkenhead, on Dec. 14.

For the supply and delivery of the following: 1. Timber for wharf extension purposes. 2. Pile shoes. 3. Mooring buoys and chains. Further particulars can be obtained from Mr. C. S. Rennell, Secretary. Tenders close Dec. 15, delivered to the office of the New Plymouth Harbour Board.

For the manufacture and delivery at Dargaville of Steel and Iron Work for Bridges on the Kaihu Valley Railway. Drawings, specification, and conditions of contract may be seen at the Public Works Offices, Auckland, Wellington, and Christchurch. The lowest or any tender not necessarily accepted. Tenders close Dec. 15. R. W. Holmes, Engineer-in-Chief, Public Works Office, Wellington.

Architects' and Surveyors' Professional Cards

B. C. Chilwell, A.R.I.B.A.,
Architect

Phœnix Chambers
Queen St., Auckland

THOS. TURNBULL F.R.I.B.A. WM. TURNBULL F.R.I.B.A.

Thos. Turnbull & Son,
Architects

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