THE STUDY OF THE HISTORICAL DEVELOPMENT OF DOMESTIC ARCHITECTURE IN CANTERBURY, NEW ZEALAND.

"THE BUILDING OF THE MAORI DISPLACED BY THE EUROPEAN DESIGNS, METHODS OF CONSTRUCTION INTRODUCED BY THE FRENCH AND BRITISH SETTLEMENTS AND THE INFLUENCES RESULTING IN THE SUBSEQUENT DEVELOPMENT OF DOMESTIC ARCHITECTURE."

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ILLUSTRATIONS:

Plans of the earlier houses were drawn from measurements taken by the author, while those of contemporary work have been copied from drawings lent by the architects or owners.
Homes and formed Kaingas and Pas.
HISTORY.

BEFORE THE MAORI:

"The first coming of native peoples to the land later to be known as New Zealand, is a matter for conjecture, not definite statement. Though we cannot say when they came or whence, we know that there were native settlers in New Zealand long before the well remembered ancestors of the present day Maori arrived in their fleet of canoes roughly 600 years ago". - Making New Zealand - The Maori (centennial publication).

Rupe, a Polynesian Sea Rover discovered New Zealand in about 950 A.D. and two hundred years later Tei (a native chief) while searching for his grandson who had been blown out to sea, sighted and later landed in this Country. He and his people settled, intermarrying with the native people, Morioris, though evidently still keeping in touch with their kin in Tahiti.

MAORIES:

In about 1380 A.D. a well planned migration of peoples seeking freedom from civil strife (not unlike the migration of British people 500 years later) set out in a great fleet of canoes from Tahiti for New Zealand. Many of these canoes made safe landfalls after this amazing journey, the crews settling in different parts of the North Island and using the name of the canoe which brought them, as that of their tribe.

The Takitumu tribe crossed to the South Island and finally settled in Canterbury. At mouths of streams, by swamps teeming with eels, on headlands and places easily fortified these Maoris built their homes and formed Kaingas and Pās.
DISCOVERY BY EUROPEANS:

Though Tasman is generally credited with the Discovery of New Zealand, there appears on the Admiralty Chart of the Indian Ocean of 1827, the following note: -

"New Zealand discovered and named by Tasman 1642, but whose Eastern Coast was known to the Portuguese about 1550."

Descriptions of these islands also appear in early French and Spanish writings suggesting that Europeans had visited this country as early as the beginning of the 16th century.

Abel Tasman, a Dutchman, while seeking an extended field for the trade of the Dutch East Indies Company, sighted New Zealand in 1642, noted the "large high-lying land" of the West Coast on 13th December and named the country Staten Land. This was later altered to New Zealand.

In 1769, James Cook, after observing the Transit of Venus at Tahiti (the real object of the voyage) sailed south in search of the Southern Continent. He sighted and later charted the New Zealand Coastline, thus clearing away a veil of mystery that for so long had shrouded the land.

SETTLEMENT:

Many years before any settlement was considered expeditions visited these shores for flax and kauri - which made excellent spars for ships - while whalers and sealers operated off the coasts. Later store bases for whaling sprang up and New Zealand had its first white residents.
Captain Hempelmann who made his whaling base at Peraki in 1835, was Canterbury's first white resident. Such men do not generally make good pioneers but missionaries soon followed and their civilizing influence considerably offset any harm which might have been done by the whalers.

The New Zealand Land Company, formed early in 1839, with the energetic Edward Gibbon Wakefield as founder and Managing Director despatched from England in the year of its foundation, five ships carrying some 1,500 emigrants (an earlier Land Association formed in 1825 had proved unsuccessful).

This Colonization of New Zealand was independent of and indeed in opposition to the Government of Great Britain which was now forced to take some action, especially as it was encouraged to do so by the Church Missionary Society. Accordingly Captain Hobson was sent out to obtain from the natives the cession of the sovereignty of the islands: this being achieved by the Treaty of Waitangi, 1840. Later, on 3rd May, 1841, New Zealand became a colony independent of New South Wales.

CANTERBURY SETTLEMENT:

Conditions in Great Britain:

The success of the revolutionary movement which drove Louis Phillippe from Paris in 1848, encouraged the poorer classes, the misery of whose lives was rendered still more acute by the bad harvests of the time, to revolt. In England there was the Chartist outbreak. These unhappy people turned hopefully to the new world which offered such a bright, simple and free life.
The Idea:

It was at this time that John Robert Godley, a young Irishman of high character and great ability, formed with Edward Gibbon Wakefield a scheme for a Church Settlement in New Zealand. Wakefield was to secure the land while Godley was to sail with the immigrants and act as leader. The Primate of all England became president of the Association which, when its financial strength came to be tried was supported by the private fortunes of Godley's friends Lord Lyttelton, Lord R. Cavendish, Sir John Simeon and others.

As in other Wakefield settlements, the Canterbury plan included the principle of a "sufficient price" for land as a means of retaining a body of labour in the new colony and attracting settlers of sufficient means to employ labour, but it also included special features of its own. This was to be solely a Church of England settlement with special endowments for the Church and its educational institutions.

The New Zealand Company was to make available to the Association 2,500,000 acres at 10/- per acre, probably in Wairarapa (on Captain Thomas's advice this was changed to Canterbury). Land in rural districts was to be sold by the Association at £3 per acre of which 10/- would go to the Company, 10/- for surveys and the expenses of the Association, £1 for emigration and £1 for ecclesiastical and educational purposes. The 1,000 acres selected for the capital city was to be sold in quarter acre sections at £25 each, while a similar area of suburban land was to be sold in 10 acre blocks at £150 each; rural land was to be sold in areas of not less than 50 acres.
In July, 1840, Captain Joseph Thomas sailed to New Zealand to select a site. He was authorised to expend £20,000 to survey the site chosen, to construct roads and bridges, to build two Churches and to provide the necessary temporary accommodation. He decided that the plains near Port Cooper in the South Island offered the best opportunities for the settlement. Thus Canterbury was chosen.

**CANTERBURY'S FIRST SETTLERS:**

At this time Canterbury had a few settlers who were of great assistance to Captain Thomas. Probably the first farmer was William Green who came to manage a cattle station in Akaroa Harbour in 10th November, 1839. George Rhodes, a brother of the owner, did not settle on this station until 1845.

In February, 1843, the third and successful attempt to settle on the plains was made by the brothers John and William Deans at Riccarton. (Three years before James Heriot and Malcolm McKinnon who farmed land in this district abandoned the place, owing to the ravages of native rats in their crop, and the menaces of the Maoris). With them were John Gobbie and Samuel Manson who later took farms of their own near Teddington and became famous as cheese makers.

On the banks of a stream at Potoringamotu (the place of an Echo) or Potoringamoto, (the severed ear) the Deans brothers and their helpers pitched their tents and began building in wood the first house on the Canterbury Plains. As the nails had been left behind in Wellington it was put together with wooden pegs. Its three apartments were formed of partitions of blankets and sheets while above was a loft for stores.
This house no longer stands, but their second house completed the following year is described in detail later in this thesis. The stream they called Avon, and the estate, Riccarton, in memory of their home in Ayrshire, Scotland.

Two months later Captain Sinclair and Ebeneser Bay who came to Banks Peninsula in their schooner decided to settle, the Sinclair family taking land in Holmes's Bay and the Bay family taking land in Pigeon Bay. These families lived in tents while a long thatched wooden house was being built: this was used for two years by which time each family had made its own clearing and built its own house.

At the same time James, Joseph and Edward Greenwood, established themselves at Purau, in Lyttelton Harbour, and were the first to bring sheep in large numbers to Canterbury. Many setbacks disheartened them and they sold out to W. B. Rhodes who built the existing stone house.

THE REALISATION:

After many difficulties the Association completed the arrangements and on September 7th and 8th, 1850, the First Four Ships, Charlotte Jane, Cressy, Randolph and Sir George Seymour, left England for Canterbury.

After a voyage lasting over three months, the Pilgrims arrived at Lyttelton (formerly Port Cooper) where a small town had been built. This was Dr. A. C. Barker's impression on arriving:

"We passed a little headland, and there at the bottom of a shallow bay lay snugly ensconced the pretty town of Lyttelton - we can scarcely imagine a more picturesque place."
At this time Lyttelton had a "splendid" jetty, above which was the town described in Mr. Godley's Private Journal.

"From the jetty a wide beaten looking road leads up the hill, and turns off through a deep cutting to the eastward (this was the bridle path.) On each side of the road there are houses scattered to the number of about twenty five, including two Hotels and a Customs House (in the shape of a small weatherboarded hut certainly, but still a Customs House). In the square, reared off close to the jetty are four excellent houses intended for Immigration Barracks, with a cook-house in the centre; next the square comes a small house, which Captain Thomas, Chief Surveyor, inhabits, but which is destined for an agent's office. Behind this, divided from it by a plot of land intended for a garden, stands a stately edifice, which was introduced in due form to us as our house. It is weatherboarded and has six rooms and a verandah, in short, seeing it, we could not help laughing at our anticipations of a shed on the bare beach with a fire at the door."

At first many of the immigrants were housed in the barracks while others lived in tents made from ships sails, or blankets, and other rough shelters. One or two however had brought cottages in sections from England. V huts were used for some years.

As selections of land were made the pilgrims climbed over the Hill on the partly completed Bridle Path to the site of Christchurch, sending belongings they could not carry, by water across the Sumner Bar. Here they made temporary shelters then began building their homes.
Streets had been roughly formed in the centre of the town, but the only buildings were a surveyors hut, a partly completed land office and a few miles away the farm buildings of the Deans brothers.

Though the Association's settlement was planned on an agricultural and not on a pastoral basis, Canterbury really owes its prosperity to sheep. The dream of a community of large landholders (equivalent to the English Squires) supported by numerous tenant farmers on small areas, was not realised, partly because the settlers did not include capitalists able to buy land on such a large scale but chiefly because natural conditions demanded that land should be held in large areas for grazing sheep.

Sheep men from Australia were so impressed with the Province as grazing land that they came to "squat" in Canterbury as they had done in Australia. The regulations of the Association were against this but after considerable agitation, the agent J. R. Godley agreed with the consent of the Land Purchasers' Society, to modify these regulations, allowing waste lands to be taken up in runs of from 5,000 to 50,000 acres.

Immediately there began a scramble for runs and by 1855 the whole of the Plains and lower hills was taken up. Late-comers had to be content with more remote country beyond the first range of mountains or across those terrifying rivers, the Rakaia and the Rangitata. Within ten years every bit of country which could possibly do so was carrying sheep. Thus the accessible parts of Canterbury were well explored in a very short time.
Having found unoccupied waste land the newcomer applied to the Board for a license for a run, describing the position of the land in a very general fashion (he did not know his exact boundaries until fencing wire became available in the early sixties when runs were surveyed). Armed with his license the run-holder set out on horseback with a shepherd, a bullock, driver and dray, loaded with stores, and a mob of ewes. Having arrived, he pitched his tent, built a sheep yard, then as soon as he could get timber built a more permanent dwelling, sheds and yards and fenced in a small holding paddock. Thus we find some of our earliest homes in wild, isolated and beautiful places.

At this time agricultural farms were limited to such areas of heavy land as those near Christchurch, Kaipoi, Woodend and Lake Ellesmere, where many cob and sod houses are found. It was not until the late seventies when the water-race system was formed that other present day grain areas were of use agriculturally. So we find that the first houses in these districts are of a less primitive nature.

Canterbury was also fortunate in that its development was not retarded by the Maori Wars which so delayed settlement in the North Island.

**THE AKAROA SETTLEMENT:**

Probably no other settlement in New Zealand has more interesting historical associations than Akaroa whose organised settlement preceeded that of Christchurch by ten years. Its fine harbour was used extensively by the whalers when Banks Peninsula was one of the chief centres of that industry.
In the latter half of 1838, after an intensive whaling cruise, Captain Jean Langlois of the Cachelot, put in to Port Cooper. Realising that the harbour and surrounding country might quickly become very valuable property, he obtained from the Maoris a deed giving him proprietary rights over it. The sale was made for a price of 6,000 francs.

Returning to France, he gained the interest of leading merchants of Nantes and Bordeaux who planned a colonising, whaling and trading venture at Banks Peninsula. The French Government - slow to act - provided an old transport ship, renamed the Comte de Paris, to carry settlers to the Nanto-Bordelaise Company’s territories, but only after the survey ship Tory had left England for New Zealand. The Comte de Paris, carrying sixty four colonists, including six Germans, was accompanied by a corvette, L’Aube commanded by Captain Charles Levaud who was to take possession in the name of the King of France of any properties handed over by the Nanto-Bordelaise Company for the purposes of the French Government. It was hoped in France that the Akaroa settlement would be only the starting point of a series of settlements in various parts of the South Island.

When Levaud arrived at the Bay of Islands, on 11th July, 1840, he learned that the whole country was already British and agreed not to proclaim French sovereignty at Banks Peninsula. Captain Hobson evidently to make quite certain immediately sent Captain Stanley of the H.M.S. Britomart with two magistrates to Akaroa, where on the afternoon of 10th August, they hoisted the Union Jack, placarded proclamations and held courts.

Naturally the immigrants were surprised and
indignant at seeing the British flag flying when they arrived a week later. However, it was agreed that they should land and remain at Akaroa pending negotiations between the two Governments, the French settling where the town of Akaroa now stands and the Germans in the next bay. Each male colonist was entitled to a five acre section and each boy between the ages of ten and fifteen years, two and a half acres. The Nantes-Bordelaise Company's claim for land was settled by the British Government's award of 30,000 acres. The Company however in 1849 transferred its entire property to the New Zealand Company.

The majority of the French settlers although naturally disappointed, decided to remain at Akaroa where they thrived under British rule. Today the twelve metre (approximately 40 feet) width of the streets, many of which have French names, the willows and walnut trees and most important of all the exceedingly attractive homes of its early settlers are the remaining links between this Canterbury town and France.

SOUTH CANTERBURY:

The district south of the Ashburton River had no place in the Canterbury Association's Scheme, though it is now one of the most prosperous parts of the province. Like Banks Peninsula the Timaru district had been used as a whaling base up to 1849.

During 1850 George Rhodes explored the territory south of the Rangitata river and finding it excellently suited for pastoral farming applied for licenses for three runs in the Timaru district.
The first home built four years later was on the beach under the cliffs near the Timaru landing place. A hut (described later) was also built a few miles inland at the Levels. The house on the beach was wattle and daub, battens being tied to the posts with flax and clay dabbed on. The roof was thatched with tussock.

Other sheep-men followed the example set by George Rhodes, direct immigration beginning in January, 1889, when 120 settlers arrived from England. Immigration from England thereafter rapidly built up the population of the district. Geraldine and Waimate came into being with the cutting of timber from the bush for the building of homesteads.

CANTERBURY OF MORE RECENT YEARS:

On 9th December, 1867, the mile and three quarter Lyttelton tunnel, constructed when the population was no more than 10,000, was opened for passenger traffic and Christchurch had direct access to its port.

In August 1874, the railway from Christchurch to Ashburton was completed and was continued to Timaru by February, 1876. Two years later it was opened through to Dunedin thus Christchurch was connected by rail with Oamaru and had easy access to its limestone. The line connecting Canterbury with Westland and its vast timber resources was completed with the opening of the great Otira tunnel in 1923.

Though many of the original settlers had huge farms most of these were gradually broken up into smaller holdings due to the improvement in communication, the development of wheat growing, the coming of refrigeration, the cutting of stock water races through arid areas and the extensive planting of the open plains with trees in
an endeavour to provide cover and reduce the effects of the violent winds. This meant that small homesteads took the place of large ones built in an attempt to reproduce the manor houses of England and as communications improved these were built with the same material as town houses.

The improvements in the country brought prosperity to the towns. The original buildings were swept away and the nucleus of our modern towns formed. Street lighting, footpaths and surface drainage were the first matters attended to by the original municipal councils.

Gas for lighting was displaced in 1914 when the Lake Coleridge (Hydro-electric) power became available; Canterbury continues to progress encouraged by the words of its first Superintendent, James Edward Fitzgerald,

"Dreamers and visionaries we were called then, as men will ever be called who set before themselves higher objects and indulge in nobler aspirations than the working world around consents to deem practical."

Christchurch now has a population of over 130,000 and Timaru 18,000.
MATERIALS.

1. SOD AND COB:

Many of the earliest dwellings were of raupo (swamp reed) built like the poorer houses of the Maoris, while some were mere caves or excavations in banks. Most settlers however wanted more permanent homes and unaided by the difficulties of securing materials built with the clay of the field.

SOD:

In marshy country the earth could be cut out in sods (not unlike peat in Ireland.) These were cut on the splay and bonded like bricks without mortar, usually in two thicknesses. Later many of these houses were rendered inside and out, considerably increasing their durability so that some are still in use.

COB:

This form of construction differs from the sod in that it is prepared clay and should be divided into three classes:

(a) Slab, cob and ricker.
(b) Sundried brick.
(c) Solid cob.

(a) SLAB, COB AND RICKER:

This type of construction combining timber and clay was often used in the back country where timber was easily obtained. A framing of posts and rails supported an external sheathing of timber slabs (usually beech), a core of cob and puddled clay and an internal lathing of rickers to which the matchlining or scrim was secured. A modification of this construction was used for many years.
(b) SUNDRIED BRICK:

Clay was roughly sundried to form bricks approximately 12" long and 6" high which were bonded into walls approximately 18" thick similar to those of sod construction. This was the procedure usually followed on the plains. Sometimes tussock was mixed in with the clay before drying, probably with the intention of making tougher bricks.

(c) SOLID COB:

This type of building was usually constructed on a clay site where the material was readily available. The topsoil from a plot about 10 ft. x 4 ft. was removed then the exposed clay loosened and flooded with water. A small portion of the black top soil was then added and the whole mass thoroughly worked into a soft mud by tramping. Loose tussock or snow grass for binding was mixed in with the wet clay until a fairly tough mass was produced.

The plan of the house was marked out on a cleared piece of ground, and a layer of this mixture two feet high and the width desired was placed to form the walls. The mixture was tough enough to stand itself without boxing, and could be roughly squared up with a spade. As each layer dried a further one was laid. Blocks were built into the window and door openings for fixing through, sometimes all walls were built up and later, openings were cut out with a cross-cut saw.

When the walls were completed they were trimmed down to a smooth surface with a sharp spade. Boxing was rarely used, for had there been enough timber for boxing, most people would have preferred to build entirely in wood.

In houses built near riverbeds shingle was mixed in with the cob, forming a poor type of concrete.
GENERAL CONSTRUCTION:

Though originally, timber construction was very similar to that in England, relying for its strength on jointing, there are now certain differences. Nailing takes the place of jointing to a large extent, though in better class work, joists are notched over plates, studding is housed into plates and trimmers and beams carefully jointed; studs (usually 4 x 2), ground floor joists (usually 4 x 2), and first floor joists (usually 10 x 2 or 12 x 2) are spaced at 18" centres and not 14" as in England.

EARLY TIMBER WORK:

The framework of some houses had been imported in sections and these were on sale at Lyttelton and Christchurch soon after the arrival of the Canterbury Pilgrims. The Canterbury Association had imported a large quantity of building material including nails, bricks, slates, rimu timber from the West Coast of New Zealand, and V.D.L. timber (from Tasmania.) These were on sale, the price of sawn timber, including Kauri being in Lyttelton, 18/- to 20/- per 100 feet.

Later the settlers were able to obtain timber from the nearest bush in Mid Canterbury, these being Riccarton, Papanui, Banks Peninsula and Rangiora. Little of the original area of these forests remains. The cost of hauling the timber was great, also it had to be "pit sawn" i.e. it was sawn by two men, one standing in a pit, the other above it working a cross-cut saw.
MODERN SOURCES:

The West Coast of the South Island has vast timber resources. Mills started at Hokitika in 1865, and in 1869 timber was being exported to Lyttelton, Dunedin and New Plymouth; in 1870 an export trade to Melbourne began.

The country dividing Canterbury and Westland is exceedingly mountainous, the only road through to the southern part of the Coast being unsuitable for transport. Timber therefore, had to be shipped until the opening of the Otira Tunnel (five and a quarter miles long) in 1923, which gave direct access to the sawmills of the West Coast. These now supply a great percentage of the timber used in this province.

A few years ago another road was built connecting Hamner with the northern part of Westland, the tunnel however is still the most important means of access between the two provinces.

2. TIMBER:

<table>
<thead>
<tr>
<th>Kauri</th>
<th>Locality:</th>
<th>North of Auckland in the North Island.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses:</td>
<td>It was used principally in house building especially for windows, doors and flooring but now its prohibitive cost allows its use only in double hung windows, bench tops and special joinery work.</td>
<td></td>
</tr>
<tr>
<td>Characteristics:</td>
<td>Sound timber rarely having a shake in it. Not adapted for underground conditions. Ivory in colour.</td>
<td></td>
</tr>
</tbody>
</table>
Totara

**Locality:** Obtainable all over New Zealand.

**Uses:** Originally it was cut for shingles but now pacific cedar is used (imported from North America.) Joinery, sleepers and sleeper plates and posts.

**Characteristics:**
Soft and light, very straight in grain, splits like a match, durable (posts have been in ground for 20 years and re-used again elsewhere.) Inclined to be brittle and spongy, reddish colour, strong in length of grain but not so in cross grain.

Matai (Or Black Pine)

**Locality:** All over New Zealand.

**Uses:** Sills, framing, flooring, weatherboards and general work in house construction (especially in North Island).

**Characteristics:**
Hard, durable and close in grain. Heavy, will only last in ground if the latter is wet. Light amber in colour.

Towai (Or Black Beech)

**Locality:** In the high country of Canterbury.

**Uses:** Bridges, etc., and recently for high class joinery and as plywood.

**Characteristics:**
Heavy and strong but cracks.

Rimu (Or Red Pine)

**Locality:** Widely distributed over New Zealand.
Kahikatea
(White Pine)

Uses: Used almost exclusively for framing, flooring, weatherboards and general construction, furniture and joinery.

Characteristics: Must be kept from damp, and cannot be used in the ground. Extensively used in present day domestic work. Sienna in colour.

Locality: Widely distributed.

Bokeria or Ribbonwood

Uses: Was originally used in house construction before the borer grub arrived from England. This attacks it so vigorously that it is no longer used generally, but having no scent makes a perfect material for churns and butter-boxes.

Characteristics: Almost white in colour, light and tough.

Locality: Widely distributed.

Its saplings were originally used in roof construction when thatch was a roofing material. Now not generally used.

Such timbers as Kotuku - tuku, Kowhai and Pahautea (Silver Pine) have at times been used for joinery and furniture. No doubt these will be used extensively in this manner in the future.

W. Marten in his "The New Zealand Nature Book" indentifies these names as follows:

Kauri - Agathis australis
Totara - Podocarpus totara
Matai - Podocarpus spicatus
BLACK BECH
(Or Black Birch) - Nothofagus solardin
Rimu - Daecrydium intermedium.

3. BRICK:
BRICKWORK:

As many of the early houses were built of sod or cob, bricks were rarely required for general building or for chimney construction. Many ships however, brought bricks as ballast to this country, these being used for special construction and for chimneys in the wooden houses.

It was soon realised that there was an abundance of suitable clays in the province and kilns were built in various places, the biggest ones being at the foot of the Port Hills and at Homebush in the Malvern Hills. The former was of the Hoffmann type, having ten chambers each producing twelve thousand. The bricks were hand moulded and pressed. This early use of brickwork resulted in Christchurch bricklayers acquiring a reputation that spread throughout New Zealand.

In Akaroa Mr. Libeau, an original French settler, made bricks from local clay after his arrival in 1840. There is in that town a block of stables and wine store which he built in brick on his site in Graham Valley.

The bricks made in Canterbury are strong and durable, but have little variation in texture and colour, the selection of English type being quite unknown. The average brick is a dull red in colour, but clays
from Homebush give a very pleasantly coloured brick the surface varying from cream to golden.

In Timaru and Ashburton bricks are used to a far greater extent than in Christchurch, where a few years ago the Brick Companies ran a competition for the best design of a brick house to be built in Christchurch, in the hope of stimulating interest in that material for use in domestic work.

The standard size of bricks is 9" x 4½" x 3", four courses rising to 13½".

**METHODS OF CONSTRUCTION:**

(a) **Solid Wall.**

(b) **Cavity Wall.** (4½" outer thickness, 2" cavity and 4½" or 9" inner wall).

(c) **Brick Veneer.** (4½" outer skin tied to an inner wood framing of 4" x 2" studding).

The cavity wall construction (b) is generally used for it has proved highly successful in this climate.

The brick veneer work (c) is really a compromise between brick and timber construction. It gives a durable external lining which requires little upkeep to a timber building, (the wooden framework being the construction member to which the brickwork is tied).
4. CONCRETE:

Originally this form of construction was rarely used though on occasions foundations were built of it, the proportions of the materials being one of cement, three of sand and six of shingle.

It does not appear to have been used to any great extent until after the Great War. One of the first concrete houses built in the province was designed by Mr. Munnings (then working with Collins and Harman) for Mr. F. Wilding, Riccarton. It had walls 5" thick on the ground floor and 4" thick on the first floor, both being reinforced with heavy gauge crimp-wire reinforcing. The first floor and roof slabs were also of reinforced concrete.

During the last ten years it has become an important building material for domestic work, more especially in Christchurch where brickwork is not used as extensively as in Timaru and Ashburton. The materials (except steel for reinforcing) are found in abundance and are easily accessible in this and other provinces of the South Island.

METHODS OF CONSTRUCTION:

There are three important methods of construction commonly used in domestic work:

(a) Two 3" reinforced walls with a 2\(\frac{1}{2}\)" - 3\(\frac{1}{2}\)" cavity between.

(b) A 6" reinforced wall battened on the inside so that the plaster is about an inch away from the surface of the concrete.

(c) A 3" - 4" reinforced concrete outer wall tied to an inner wooden framing of 3 x 2 or 4 x 2 studding.
Though more expensive, (a) is the better method and more commonly used. As in most concrete houses wooden joists are still used to carry floors and ceilings, the change from plaster on concrete walls to lath and plaster on ceilings is liable to cause cracking. This is overcome in types (b) and (c) where lath and plaster is used on both walls and ceilings.

Type (c) is easily constructed, though the concrete is of more importance as a protection to the timber framing than as a structural material.

Most of the houses now built whether of wood, brick or stone have concrete foundations. The mixes generally used are, one of cement, two of sand and four of shingle (to pass $\frac{3}{4}$" mesh) for walls and floor slabs; and one of cement, two and one half of sand and five of shingle (to pass $1\frac{1}{2}$" mesh) for foundations.
5. STONE:

Before studying the stone examples in the province it is necessary to consider the nature of the supplies of stone available.

STONES IN THE PROVINCE OF CANTERBURY:

Trachytes:  Quarrries:  Port Hills between Lyttelton and Christchurch.
Uses:  Base and String courses of buildings.
Characteristics:  Apt to flake in weathering.

Andesites:  Quarrries:  Slopes of the Port Hills, Hoon Hay or "Garlands."
Uses:  In considerable quantities as squared or random rubble. Hoon Hay often used as ashlar.
Characteristics:  Grey in colour - expensive to dress; lasts well.

Basalts:  Quarrries:  Timaru, Halswell.
Uses:  Timaru, on plinth work, steps, curbing. Halswell, as random rubble.
Characteristics:  Dark grey colour, obtainable in large sizes.

Marbles and Granites:  Quarrries:  Hammer.
Uses:  Internally as dressed work. It is used a great deal in domestic work for fireplace surrounds.
Characteristics:  Varies in colour from pink to a dark red. The veining in the stone makes it unsuitable for constructional work, and regulates the sizes used.

Soft Limestones:

A. Quarrries:  Camaru, just outside the provincial boundary and easily accessible.
Uses:  Extensively as dressed ashlar.
Characteristics:

Very easily quarried. Weather badly in localities where frost is severe; is free from bedding planes and regular in grain. Absorbs the dirt in the atmosphere readily.

Soft Limestones:

B. Quarries: Mt. Somers, in the foothills of the Alps.

Uses: Internally, as dressed work.

Characteristics:

Unsatisfactory in external weathering. In colour is warm pink, making good internal finish. Also obtainable in cream colour.

Note: There are a number of limestones found in North Canterbury which weather badly in the atmosphere of the town, but which when used locally, stand tolerably well.

Sandstones:

Quarries: Governor's Bay and other localities of the Port Hills.

Uses: Dressed ashlar work.

Characteristics:

These weather badly, but are suitable for internal work.

Various Data:

In Bulletin No. 11, Building Stones of New Zealand, Dr. P. Marshall has classified these as follows:

<table>
<thead>
<tr>
<th>Stone Type</th>
<th>Quarry</th>
<th>Crushing strength in tons per Sq. In.</th>
<th>Wt. Lbs. per cubic foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trachytes</td>
<td>from Port Hills</td>
<td>2.2</td>
<td>145.5</td>
</tr>
<tr>
<td></td>
<td>&quot; Garlands</td>
<td>2.5</td>
<td>152.7</td>
</tr>
<tr>
<td></td>
<td>&quot; Moon Bay</td>
<td>2.3</td>
<td>145.0</td>
</tr>
<tr>
<td>Basalts</td>
<td>&quot; Timaru</td>
<td>14.9</td>
<td>166.2</td>
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<tr>
<td></td>
<td>&quot; Helswell</td>
<td>5.3</td>
<td>190.0</td>
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<tr>
<td>Soft Limestones</td>
<td>from Camaru</td>
<td>1.1</td>
<td>117.0</td>
</tr>
<tr>
<td></td>
<td>&quot; Mt. Somers</td>
<td>0.9</td>
<td>140.0</td>
</tr>
<tr>
<td></td>
<td>(Pink)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sandstones</td>
<td>&quot; Governor's Bay</td>
<td>1.5</td>
<td>135.4</td>
</tr>
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</table>
The Christchurch quarries were made available to builders in the earliest days, Omaramu and Mt. Somers being opened a few years later and Hanmer comparatively recently.

As the Christchurch rocks are of dykes in the "Lytelton" system, the size of the blocks is small and most buildings of rubble. The stone from Mt. Somers and Omaramu is quarried in large sizes and often used in ashlar work, the latter particularly being used to a large extent for dressings in buildings of another material.

The group of buildings near the Hurunui Bridge show an interesting use of the North Canterbury limestone. The stone has been specially cut for the walls on the entrance front of both the house and hotel and the material left from the cutting has been used in the rubble work of the less important walls.

Stone is not used to any great extent in the construction of domestic buildings of the present day. When used at all, it often has a backing of reinforced concrete as in the house on Scarborough Hill. In rare cases as in The Sign of the Kiwi (a tearooms on a saddle of the Port Hills) the wall is solid and the rock face shows on both surfaces.

Most of the stone now quarried for domestic work is used in fences, fireplaces, terraces and in such special parts of the building.
PAIKA KAWA
STORE HOUSE

CARVING TO BELL STAND
ROTORUA CHURCH

WAKA ROA: ENTRANCE TO PA
MAORI HOUSES.

"The perishable nature of the building materials used by the Maoris and the operation of the social customs relating to the property of deceased chiefs, have rendered it a difficult matter at the present time to obtain from personal observation, a faithful record of the various buildings which in times now past, went to make up the village cluster or Hainga - unfortified - or the fortified Pa or stronghold." - Augustus Hamilton. - "The Art Workmanship of the Maori Race in New Zealand."

The Maori was a deeply religious person whose art was an integral part of his life. This was expressed in the Whare - whakairo (which served as a council chamber and guest house), Whare-maire (a sacred house in which was taught the history and learning of the tribe), Whare kura (where classes were held for instruction three months of the year from sunset to midnight), and Whare rangi (store house built upon posts) for it was on these buildings that most of the best art workmanship was bestowed. It is interesting to note that the names and positions of most of these ceremonial houses are known, even though they include those built by the members of each canoe on its arrival in New Zealand.

THE MAORI VILLAGE:

Each family group surrounded its house or houses with a screen fence and several of these groups combined to form a village, protected by a strong fence enclosing sufficient space (usually in front of the large assembly house) as the Maroe or courtyard for dances and meetings.
In large Pas the great fence (pekerangi) was divided into bays by large posts (tukumaru) carved to represent defiant armed warriors (kahia). In important Pas a slave was buried under each Tukumaru. These Pas also contained store houses for food, weapons, paddles etc., cook house, covered pits for storing root crops. Captain Cook noticed that the sanitary conditions were better regulated in the Pas than in many of the large cities in Europe at that time.

These villages were built where the abundance of fish, eels and birds promised a plentiful supply of food, and where the formation of the land provided natural protection. It is also claimed that esthetic considerations were quite important, thus the site was usually a clear one commanding a good view.

They were however, particular in retaining trees and shrubs in certain positions, though it often meant bringing wood for timber or firing from a great distance. Great areas of our forests would still be protecting good farming land from erosion had some of the white settlers shown the same reluctance to destroy such beautiful trees.

There were no regular streets, merely openings in each fence. The main entrance (waka roa) was however elaborately carved. Many of the great Pas must have contained one or two thousand people, though at the time of the arrival of the colonists they were generally smaller.
The great difference between the life of a Maori community and that of an English one, makes it exceedingly difficult to determine exactly which of their buildings should be called domestic. It appears necessary however, to include the whare (common house), the whare whakairo (guest house), whare-umu (cooking house called in some districts, kauta), and whare rangi (store house).

**WHARE OR COMMON HOUSE:**

Their houses are the most inartificially made of anything among them, being scarcely equal, excepting in size, to an English dog-kennel. They are seldom more than eighteen to twenty feet long, eight to ten feet broad, and five to six feet high from the ground to the pole which runs from one end to the other, and forms the ridge. The framing is of wood, generally slender sticks, and both walls and roof consist of dried grass and hay, which, it must be confessed, is very tightly put together; and some are also lined with the bark of trees, so that in cold weather they must afford a comfortable retreat.

The roof is sloping, like those of our barns, and the door is at one end, just high enough to admit a man creeping on his hands and knees; near the door is a square hole, which serves the double office of window and chimney - for the fireplace is at that end, nearly in the middle below the two sides; in some conspicuous part, and generally near the door, a plank is fixed, covered with carving after their manner - this they value as we do a picture, and in their estimation it is not an inferior ornament; the side
walls and roof project about two feet beyond the walls at each end, so as to form a porch, in which there are benches for the accommodation of the family. That part of the floor which is allotted for the fireplace is enclosed in a hollow square by partitions, either of wood or stone, and in the middle a fire is kindled. The floor along the inside of the walls is thickly covered with straw, and on this the family sleeps.

Some of the better sort, whose families are large, have three or four houses, enclosed with a courtyard, the walls of which are constructed of poles and hay, and are about twelve or thirteen feet high. We saw at Tolaga the frame of a house much superior to these; it was thirty feet in length, fifteen feet in breadth, twelve feet in height, and adorned with carved planks."

"Hay" is really sedges, grasses and reeds, "bark" is from the totara pine and "straw" is leaves of the Nikau Palm and other ferns.

The makau or deep porch at the end of the house usually faced the sun, it being an ill omen to face the south. It was here that the owners had their meals, for no cooked food could be taken into a dwelling house.

The Maoris being an open air people used their whares chiefly as places of rest. Such houses as these are no longer built by the Maoris except for exhibition purposes.
WHALE - WHAKAIRO (Carved House - Used as the Guest House).

In constructing such a whale the front (roro) and back (tuarongo) were first marked out with the roro sloping inwards towards the right - this being done for some occult reason - and with the sides of the open porch (whakamahau) parallel to but slightly within the outer walls.

A trunk of a tree, either whole or split in half, was erected in the centre of the roro and tuarongo to form posts (pou tahu) for supporting the ridge pole (tahu or tahuhu). These posts were carved or painted on the inner convex face; that at the roro being perceptibly higher than the other to allow the smoke to escape at the front of the house. Sometimes they attempted to preserve the pou tahu by surrounding it with slabs cut from the fibrous trunk of the large tree ferns (ponga) which were almost imperishable.

The Tahu was an obtuse isosceles triangle in section. It was in one piece - in a large house, two or more feet in width - and projected about ten feet over the front of the whare to form the ridge of the whakamahau. This projection was carved to represent a conventional human figure (pane) while the part between the posts was painted with a scroll pattern (kowhai). The tahu was fixed to the posts by stout pins and by lashing to sunk eyes.

Temporary supports between the posts were replaced by the pou-tokomanawa, a post much lighter than the pou-tahu, usually square through the greater part of the length but with the lower part carved to represent a human figure.
After the European settlement a light pole was sometimes used to support the projecting end of the tahu but this formed no part of the regulation Maori Whare.

The upright slabs of wood (poupou) forming the framework of the sides were set in the ground. These were from one to three feet wide, three to nine inches thick, and projected about six feet above the ground though graduated to follow the slope of the tahu. The poupou were flat, or slightly convex on the inner face, which was sometimes carved, sometimes painted and sometimes relieved by notches. The outside edge of each was rebated, while at the top was a semicircular depression to receive the end of the rafter.

The poupou leaned slightly inwards and was buttressed with a hirinaki - a rough piece of split timber set in the ground and lashed to eyes near the upper end of the poupou. There were invariably an odd number of poupou on each side of the whare and an odd number also - generally three - in the whakamahau. These were placed at even distances so that the spaces between were slightly wider than the poupou, the upper outside ends of which were lashed to a continuous batten (kahopaetara).

The framework of the tuarongo was of uprights similar to the poupou, called "epa" and set on either side of the pou-tahu - generally there were three on each side but in a large whare as many as five. These were lashed to the heke-tipi which followed the gable and formed a sort of verge board. The roro was constructed similarly with the epa cut away for the door frame on the left and for the window frame on the right.
A skirting board (papaka), rebated on the top to correspond to that on the side of the poupou, was fixed between the epe and poupou.

The door, rarely more than two feet wide and four feet high, consisted of a slab of wood about two inches thick, which slid into a recess in the wall. The threshold (paepae) of 12" x 12" timber grooved to take the door, projected on either side well past the frames which were roughly tenoned into it. These frames (whakawai) were generally ornamented on the face - the inner one was in two pieces to allow the door to pass - and were tenoned into the head (taupoki). The recess for the door was lined with light horizontal battens to protect the wall materials. After the walls of the whakamakau had been lined with raupo, a carved slab (korope) was fixed across the head. The window, about two feet square, was constructed similarly.

After the poupou had been allowed to stand in the ground some time, the rafters (heke) were put into position. These were flat on the upper and rounded on the under side (which was usually ornamented with a painted scroll pattern) and curved slightly upwards to the tahu.

The upper ends were lashed to the tahu or to a lighter beam (tahu-iti) resting on it, while the lower ends were cut into a tongue (teremu) to fit the depression in the top of the poupou to which they were lashed.

The front edges of the walls were protected by carved slabs (amo) which supported the barge board maihi.
A projecting rib on the backs of these either rested against, or formed a rafter, while the portion of the māhi continuing past the amo was carved with a pierced pattern. The upper part of these boards was left smooth and painted, while their junction was covered by a carved flat face, the koruru, which was decorated with feathers and sometimes surmounted by a full length figure, the tekoteko. This seems to have been tenoned and pinned to the māhi. The roof framing was completed by purlins (kahe) which were roped to the tahu and poupou.

The covering to the roof (tuanui) was then commenced. Screens were formed by evenly lashing the kakaho (reeds of toe-toe, a giant grass) to laths (karapi) spaced at distances corresponding to those of the kaho. These screens were carefully bound - laths uppermost - to the kaho, giving an attractive reeded surface to the sloping ceiling of the whare. Upon this, a covering of raupo was laid followed by alternate layers of raupo and toe-toe until it was judged that the roof was of sufficient thickness. The roof was then thatched with toe-toe, and the ridge protected by a turihunga of ponga (fronds of tree ferns). The thatching was kept in position by vines placed latticewise across the roof.

The spaces of the walls between the poupou were filled in by mats woven from strips of flax leaf (kie-kie) or with lattice work panels (tukutuku) similar to the roof panels. Patterns were made by using laths painted red and black to which the reeds
were laced by white or black kie-kie or a rich orange coloured grass (pingae), in various named stitches. These were fixed in position between the poupou and protected on the exterior by vertical bundles of raupo lashed to the battens which held the tukutuku. The interior of the porch was lined with reeds while across its entrance a piece of timber about eighteen inches high and four inches thick (paepae kainga awha) was fixed.

The floor was strewn with rushes and fern over which, on state occasions, flax mats were laid. The hearth (takuahi) a space about a foot square, generally defined by four stones, was placed half way between the pou-tokomanawa and the front pou tahu, the side of the hearth being placed on the line drawn to the pou-tokomanawa from the edge of the poi-tahu next the door.

Every step in the construction was taken with the greatest ritual and the naming of the house included the taking off of the spell under which the building had been laid during its erection. In many cases a person was sacrificed and buried in special positions (these differing with the tribes).

When such houses are built now, the interior and carvings to the exterior are made similarly, but the whare itself is constructed of something more durable, possibly weatherboarded or built in concrete.
WHERE RANGI AND PATAKA

The great store houses (pataka) in which were kept the personal possessions or provisions of the chief were usually elevated to a considerable height on a single post, though a few particularly large ones were built on strong piles a few feet off the ground. They were painted red and sometimes elaborately carved externally. The sides were lined in some cases, with slabs cut from tree-fern trunks which are practically rat proof.

RAFTER PATTERNS

The timber chiefly used by the Maoris in the South Island was totara, though matai too was commonly used. There were a number of patterns used in decorating the rafters. These, almost without exception, consisted solely of curves painted in red and black in the white timber. It appears that the artist did not decrease the pattern to suit a smaller rafter but painted on as much as he was able - thus really forming a different pattern, - nor did these patterns have any beginning or end. The modern Maori craftsmen unfortunately often adds diamonds, clubs and other glaring signs of contact with the pakeha to the more simple patterns.

It is natural that the early settlers should, on their arrival in New Zealand, build huts similar to the Maori whare, especially when helped by Maoris. These settlers were in fact in a similar position to the earliest Polynesian immigrants - surrounded by natural materials whose qualities they did not know, yet unable to procure the materials familiar to them.
These temporary raupo dwellings, modified of course according to European ideas of hygiene and comfort were a feature of pre-colonisation settlements.
HOUSES OF THE EARLY SETTLEMENT.
1840 - 1870.

"To live in a mud hut for a year or two seems ordinary preparation for a colonist's life. After the mud hut comes a wooden tenement of greater pretensions ... and doubtless in time a substantial house."

Some colonists actually followed out this rotation of houses, finally achieving this pioneer's desire - a stone mansion. English people were used to homes of brick or stone and naturally built their new homes of these materials whenever possible; many found to their surprise that wooden homes could be both durable and comfortable and as timber was plentiful, it became the chief building material for domestic work. For this reason most of Canterbury's stone houses were built in the early years of the province.

The Maori house had little influence on the design of these homes, for their builders were attempting to produce the types of houses they had known in England. Some huts were however, constructed in a manner similar to that used by the Maoris in building their whares.

In the earlier period when buildings were small, essentials only were considered and design sometimes resulted as an accident. Many of these buildings now remaining are most attractive but many of the more temporary ones must have been quite ugly, for as one new arrival at Lyttelton explained in a horrified fashion, "The lean-to style of architecture predominated in those days so much so, that many buildings were lean-to's pure and simple having nothing where to lean."
As houses of different materials were being built at the same time, these have been grouped according to their building material rather than the date of building.
Sketch of original sod house.

Elevation of existing house. Scale: Eight feet to one inch.

Plan showing additions made as different materials became available.

Sod house, North Woodend.
SOD AND COB.

SOD HOUSE AT NORTH WOODEND, CANTERBURY:

Built by Mr. Ayers in approximately 1855.

The plan of this house is very simple, as it has one room 22" x 12", divided into living room and bedroom by a light wooden partition. A brick foundation 12" deep supports the 18" walls built of sods 9" high and 8" to 10" thick, cut (on the splay) from the marshy ground nearby. These were roughly bonded together in walls and chimney. The floor was clay. The roof, constructed of ribbon wood saplings about 3" diameter, was thatched with raupo and flax. The two fixed sashes with their very small panes of glass (roughly 8" x 6") were built into the cob and fixed at the head to wood lintols spanning the opening. The ledged door was lined with 1/2" boarding and cover battens and secured by a chain.

There must have been many houses similar to this built by the early settlers but few exist today, for unless plastered externally, they weather badly. The owner of this house evidently decided to use it as a nucleus for a larger home. A brick dairy and wood scullery was added to the sod portion, which had been plastered internally and externally; the roof was continued over the new portion, the thatch removed and replaced by totara shingles on 4" x 1" purins at 8" centres. The timber was cut from the bush in the district. Later a wooden portion was added, which though ugly, shows a marked improvement in construction on the original house. It has 4 x 2 studs, totara weatherboards externally, 1" boarding scrim and paper internally, a wooden floor and sliding sash windows.
ELEVATION

PLAN

HOUSE NORTH WOODEND
BUILT 1860
SCALE: EIGHT FEET TO ONE INCH

ELEVATION OF COB WALL

SECTIONAL PLAN OF COB WALL

DETAILS OF COB CONSTRUCTION
SCALE: TWO FEET TO ONE INCH
Its ceiling height is 7'7" (in the original house it is 6'8") while the upper floor is almost entirely in the roof. This building is now used as a farm implement store, which use has probably saved it from demolition.

**SMALL SOD HOUSE AT SOUTH WOODEND:**

Built approximately 1860. This house also, was of two rooms. Its walls 22" thick have been plastered externally and internally and are in excellent condition. Its whitewashed walls with door and window lintols picked out in red, its pleasantly proportioned sliding sash windows running almost to the floor and its steeply pitched roof make it an attractive house - a tribute to its builder.

**SUNDRIED BRICK HOUSE NEAR THE HEATCOOTE BRIDGE:**

The settlers used sod a great deal for fences, many of which still exist, reminding one (as they probably reminded their builders) of the stone boundaries of Northern England.

The plan of this house is similar to that of the sod house. Its construction too was similar, for the cob bricks and sods were about the same size and bonded similarly, the chief difference in appearance being the vertical joints of the bricks in contrast to the sloping ones of the sods. Photographs of this house show a shingle roof on framing of wrought timber.
VIEW FROM NORTH

FIRST FLOOR PLAN

GROUND FLOOR PLAN

COB HOUSE, CASHMERE.
BUILT 1857

SCALE, SIXTEEN FEET TO ONE INCH.
SUNDRIED BRICK HOUSE, CASHMERE:

This is one of the earliest of a group forming the farm buildings of the Cashmere Estate and was built in 1857 by Sir Cracroft Wilson. No doubt the Indian Coolies who later built the stone house on the same estate helped in its building. It is considerably larger than most houses of this type and has a more interesting plan. The two main rooms (facing north-east) open on to a wide verandah whose roof is a continuation of the main roof. As the external walls are 2'6" thick, the door and window reveals are very deep and look quite attractive. The two other rooms are of reasonable size and pleasantly proportioned. There is a large kitchen on the south-west. The first floor contains four bedrooms and a bathroom lit by dormers and by windows in the weatherboarded gables. The ground floor partitions are of 14" cob, lined with scrim and paper, while the wooden partitions of the first floor are lined with boarding, scrim and paper.

Originally the roof was thatched, but this has since been replaced by iron in flat sheets with roll joints. There is a deep bay window to each of the two main rooms and dormer windows with carved barge boards to the landing and two bedrooms. The cob is plastered externally.
SOLID COB HOUSE AT AVONHEAD, RICARTON:

This house, built in 1850, for Mr. Bray is one of the best examples of cob and thatch building in Canterbury. The house is built at the source of the Avon (which flows through Christchurch) and originally its long verandah overlooked an extensive lawn.

The central hall, off which runs a staircase, connects with a corridor running the entire length of the building on the south-west. This hall is panelled in 1" totara which is still in very good condition. The dining room was originally panelled in a similar fashion.

The main staircase connects with two bedrooms, the others having separate staircases from the rooms below. These bedrooms are all built in the roof as shown on the section. The doors are of totara and are in excellent condition. The fireplaces are built into the 18" cob walls so that the flues come up through the centre of the partitions, making no break in the first floor walls.

The walls generally are 18" cob with 3/4" plaster on both faces, the ceiling joints are 5 x 2 V.D.L. (the ceiling height of the first floor is 8'6") and the roof is thatched with wheat and barley straw. The windows are of the casement type, some leaded, some with wood glazing bars; originally there were six dormers similar to the two shown in the photographs. This house, though not in use, is kept in good condition by the owner - Hon. G. Witty.
GROUND FLOOR PLAN

DETAIL OF COB PORTION

VIEW OF HOUSE FROM NORTH

MIDDLETON - GRANGE - RICCARTON
ARCHITECT - B. W. MOUNTFORT 1855
SCALE - SIXTEEN FEET TO ONE INCH

SKETCH OF "MESOPOTAMIA"
BUILT BY SAMUEL BUTLER
MIDDLETON GRANGE:

As the illustrations show, this is a comparatively large house of two distinct blocks built at different periods. The foremost block designed by B. W. Mountfort in about 1855 formed the original home.

Its walls are of cob, the external ones being 2'6" and the partitions 1'6" thick. No doubt the "pebble dash" finish of the external walls was not on the original house.

There was a living room, dining room, bedroom, dressing room and kitchen on the ground floor and three bedrooms built in the roof. The living room is made very attractive by the tall windows and by the high ceiling which, running well into the roof, is coved on two sides. The dining room panelling of totara is still in very good condition. Most of the framing in the house is totara (probably sawn from the Riccarton Bush) though the roof was of V.D.L. shingles - these have since been covered by corrugated iron.

The later additions in wood include new bedrooms and kitchen. This block is less attractive than the earlier one because of its striving for a Gothic effect, but the building as a whole makes a very pleasant composition.
SKETCH SHOWING CONSTRUCTION OF S. A. B. ROOF AND RIGLER HUT

VIEW OF HUT AS EXISTING

GROUND FLOOR PLAN.
HUT AT THE LEVELS STATION
SOUTH, CANTERBURY

SCALE: EIGHT FEET TO ONE INCH
MESOPOTAMIA:

The solid cob house built by Samuel Butler is a good example of the back country home of the pioneers. Its roof was of snow grass, so plentiful in that mountainous district. An amusing memory of the thatching is recalled by Acland who writes, "When he (Butler) was first thatching the cob house, which is still standing (since this was written the house has fallen down) he put the top of each bundle of snow grass outside the bottom of the one above, so that all the rain ran inwards;" this as George McMillan said seemed "extraordinary for so clever a man."

HUT AT THE "LEVELS":

This house, of the slab, cob and ricker type is claimed as the oldest existing dwelling in South Canterbury, though as the photograph shows, it is now in very poor condition. It was built in the early "fifties." This is not the first home built in Timaru nor in fact the first home at the Levels Farm, for Stubbs, in describing driving the first cattle there in 1852, wrote, "We then shaped our course for the Levels hut which in shape was an inverted V."

The construction of this hut resembles to some extent that of a Maori whare with 6" circular posts, mainly totara, built into the ground at the corners of the building and at the centres of the partitions - these carrying the ridge. The walls were lined externally with totara slabs roughly 3" wide and 1½" thick.
The cob inside was lined with ¼" rickers to which the scrim and paper was fixed. The thatched roof was constructed of rough timber, the rafters being about 3" in diameter and the purlins 2". The construction is explained in the isometric sketch.
Ho•se bui•t at Ricca•ton 1843 - 44
by t•e Dea•ns Broth•ers (as exist•ing)

Sc••le: Si••teen feet to one inch

Goddle•'s House Lyt•te•lon
bu•lt 1850 (remai•ning portion of or•ignal)

Sc••le: Si••teen feet to one inch
TIMBER.

DEANS HOUSE, RICCARTON:

The framework for the original wooden house at Riccarton was brought down from Wellington early in 1943, and put together with wooden pegs, the nails having been forgotten. It contained three rooms and a loft and was used as a farm building until its demolition in 1890. Within a year of the building of this house two more were constructed, one of which still stands.

The ground floor comprises living room, two bedrooms and a verandah - part of which was later enclosed to form a porch - two extra bedrooms being built in the roof.

The walls externally are weatherboarded. The living room is paneled in totara, the bedrooms being lined with 1" boarding to which the scrin and paper was fixed. The windows, (most of them have since been replaced) were divided into small panes $9\frac{1}{2}" \times 7\frac{1}{2}"$. The staircase which is very narrow rises steeply, having a $9\frac{1}{2}"$ rise and $9"$ treads.

The floors are wooden though that to the verandah was originally clay, now replaced by brick paving. The roof was lined with wooden shingles.
HOUSE NEAR THE JETTY, KAIKOURA:

Built approximately 1849. This house is built in the shape of a T with bedrooms forming one arm and the living room, dining room and kitchen (with bedrooms in the roof) forming the cross arm. Part of this house was once used as a gaol, the two storey portion probably being the residence and the single storey section, the police quarters. This had originally a separate entrance and small hall, now added to one of the bedrooms. Because of a change in the level of the rock on which it is built (portions are actually built into the rock) the floor level here is about 30" above that of the main building including the verandah.

On this verandah to the bedroom block a long seat, in which steps are formed to each casement door, makes up the difference in levels. This portion has a steeply pitched roof with low eaves forming internally a coved ceiling.

The kitchen has large beams supporting the ceiling which is in panels of beaded lining between cross joists, these being for some odd reason, packed off the beams, leaving a space between them and the ceiling. The living room has an unusual bay with casement doors in the centre and windows in the splayed portion; the windows have casement sashes. The bedrooms upstairs have a ceiling height of 6'6" and are built entirely in the roof, the greater portion of the wall surface sloping with it.
The staircase is steep and narrow but has an interesting balustrade of 1" square slats set diagonally in the string and capped by a neat handrail.

The walls are weatherboarded, filled between the studs with cob and lined with scrim and paper. The ground floor partitions are formed of rough posts (many still retaining their bark) with panels of cob between. The bedrooms in the roof are plastered and the roof is of iron.

The unearthing of Moa's eggs (now in the British Museum) during the excavating of this site was the first of a series of such discoveries in the district.

V HUTS:

These tent-shaped huts used by the people of the Canterbury Settlement and by settlers in other districts were some of the first wooden buildings in the province, though a few homes like those at Kaikoura and Riccarton, had already been built in isolated places. There were originally quite a number of these V huts in Hagley Park and on the Deans Estate at Riccarton.

The sketch taken from a photograph shows some of the Riccarton huts which boasted windows - a few had chimneys though many were little more than a roof containing bunks and a door. As has already been mentioned, the first hut at the Levels, Timaru, was of this type.

These huts which could be built in a day were merely temporary shelters.
GODLEY'S HOUSE, LYTTELTON:

This house was built for the Canterbury Association's agent, Robert Godley and was constructed immediately before his arrival in 1850. Though still standing (and occupied) it is somewhat smaller than the original house, photographs of which show a longer west front with two dormers above the verandah. The roof was of shingles.

The ground floor of the existing house is composed of living room, study, kitchen and hall, from which a staircase leads to the three bedrooms built in the roof. A verandah runs the length of the house on the west side. Australian timber was used in its construction.

Houses Brought Out from England in Sections:

As has been previously mentioned, some of the Canterbury Association Colonists brought houses (in sections) with them, from England. The photograph shows a model of one of these now in the Christchurch Museum. Its label reads, "Model of House built in London by Messrs. Tippett, Silk and Heywood, brought out in ship "Steadfast" and erected by them in Lyttelton in 1851, still standing forming part of a house there." I have not been able to unearth it but have found a house built in a similar fashion, which might quite well be an extension of this place. It is described on the following page.
CONSTRUCTION DETAILS

HOUSE, LYTTELTON OWNED BY MR. CLEARY
BUILT 1859

FIRST FLOOR PLAN

HOUSE, LYTTELTON
BUILT FOR DR. GUNDY
IN 1860

SCALE: SIXTEEN FEET TO ONE INCH.
HOUSE, LYTTELTON, OWNED BY MR. CLEARY:

This house has been altered considerably by partial rebuilding after fire, but many of the rooms and walls exist as originally built. Before the fire, it had a plan in the form of an H and though it sounds ironical this was done probably, to give each room an external door for ease of exit in case of fire. English people, used to brick or stone buildings looked on wooden houses with suspicion. The portion now used was built in 1855.

The external walls are lined with vertical boarding 9" x 3/8" pit sawn, with cob filling between the 9" posts, while the internal walls are lined with scrim and paper fixed to horizontal battens. The internal partitions are built of 9" x 5" posts with cob filling between. The roof was of shingles. The rooms are pleasantly proportioned and have coved ceilings. The photograph shows the projecting window to the living room which is pleasantly proportioned and well detailed, (in a Gothic fashion).

HOUSE, LYTTELTON, BUILT FOR DOCTOR GUMLEY, 1860:

This house is typical of those built in Lyttelton about this period. On the ground floor there is a kitchen, living room, two bedrooms and a bathroom; the stairs lead to three bedrooms (built in the roof) which are lit by dormer windows. Originally the verandah ran along three sides of the house but that on the north side has since been enclosed to form a hall. The living room was quite attractive, with casement doors (now replaced by
windows) opening on the East verandah overlooking the harbour. The low ceiling 8'2" is quite in proportion to the comparatively small room.

The exterior, with its encircling verandah and three dormer windows is quite well proportioned. The roof now iron, was originally slated; the walls are of imported Baltic timber and cob filling with the scrim and paper fixed to battens running horizontally at approximately 12" centres. The ceilings are T. & G. This practice of filling the walls between outside and inside linings with cob seems to have been a common one (it is no longer used), and is probably derived from the cob, slab and ricker form of construction where the cob acts as an insulator.

**HOUSE, CHAMBER SQUARE, CHRISTCHURCH:**

This house probably built some years later, is a compromise between the former type of house and the T-house. The roof is lit by very small windows in the gable, but no longer used as bedrooms. The front is pleasantly proportioned, the verandah with its delicate supports being particularly attractive.

Unfortunately, the owners refused to give me any information regarding its building. The first time I called the owner's wife told me it belonged to her daughter who was away. I called again, the daughter telling me I would have to ask her father who was away. The third time I called the owner answered the door and was giving me permission to photograph the house when his wife and daughter screamed from within what they would do to him if he did. I took one without permission.
TIMBER HOUSES 1840 - 1870

HOUSE: KAIKOURA

MODEL OF HOUSE: CANTERBURY MUSEUM.

HOUSE: CRANMER SQUARE.

HOUSE: BRUCE CREEK, AKAROA.
HOUSF NEAR BRUUF CREEK:

Built about 1860, for the Rev. Elmer. This is an excellent example of what is considered the typical colonial residence—a rectangular house completely surrounded by a low verandah. The west verandah was removed when the mock Gothic additions were made in about 1890.

The main hall, at the end of which is the living room has four small bedrooms opening off it—two on each side. The living room and dining room are divided by a folding partition and together form a large room with casement doors opening on to the north and south verandah. On the East side of these rooms are the kitchen, wash-house and store. The bedrooms have casement sashes. The internal doors are solid totara with raised panels. The timber used for weatherboards, studs and joists (which are 5 x 3 in comparison with 4 x 2 used today) are of pit sawn totara. The ceilings are of 3" x 1 1/2" T. & G. and all have wood cornices.

The partitions have 9" x 4 1/2" x 3" sun-dried bricks built in between the studs and bracing. This is an unusual construction, more especially as the bricks, unlike the cob they replace, contain no straw binding. The two story block on the west was built some twenty years later, and is typical of the mock Gothic of wooden buildings erected in Canterbury during that period. The rounded junction between stiles and head of the fanlights, to the windows of this section is very interesting.
HOUSE AKAROA
BRUGHT FROM FRANCE BY MR. ETEVENEAUX

SCALES
EIGHT FEET TO ONE INCH
TWO FEET TO ONE INCH
FRENCH HOUSES, AKAROA:

These houses were generally built of timber from the surrounding bush, though some materials including sashes and doors were brought from France. All had totara shingle roofs, sometimes nailed to 8 x 1 Ribbon-wood sarking though more often fixed to battens. Some had roofed verandahs though in many cases this was a mere framework for grape vines, the leaves of which formed in the summer, an awning for protection from the sun. All houses had a large vine trained around their walls and apparently all had shutters. They were well proportioned and of far superior design to that of the houses built by the original English settlers.

HOUSE, LEVAUD STREET, AKAROA:

This was owned by M. J. P. Eteveneaux who probably erected it soon after his arrival in 1840. Mr. Westenra whose father was an early Akaroa resident believes that this house was brought out from France in sections - its design certainly suggests this.

The pilasters would form excellent cover to the joints between the sections. It was very small, comprising living room bedroom and hall; it has since had rooms added at the back, these making it more convenient but less attractive.

As can be seen from the drawings, the windows, door and cornice are well detailed and are of excellent workmanship. The shutters to the windows remain, but the bell-cast shingle roof has had a gutter added and has been covered with corrugated iron.
The windows open inwards and have fanlights decorated with iron arrows. A small iron cast suggestive of a coat of arms decorates the frieze above the door. The internal doors are very light being only 1½" in thickness.

It is interesting to remember that this well designed house was erected at a time when there were few white people in Canterbury and when the roughest shelter must have seemed a palace. As is shown in the photograph, the present owners in their enthusiasm have painted the pilasters, door, sashes and shutters a deep green with bright red trimmings, unfortunately losing the detail and proportions. It will however, protect the work until some local body realising its historic and artistic value claims it as a memorial to the French Pioneers.

ADMIRAL LEVAUD'S HOUSE:

Built approximately 1845. This house has since been demolished but was similar to that in Levaud Street (as it was constructed on the site no pilasters were necessary). It had however a room in the roof lit by a small dormer window and reached by "a spiral staircase of dark wood - probably mahogany." This must have been brought to Akaroa by Admiral Levaud and came possibly from some ship. The stud walls of this house were lined on the outside with weatherboards, on the inside with paper and had a filling of clay, Mr. Vangioni who remembers the demolishing of this house says, "In the clay filling between weatherboards and lining paper, there were short lengths of ribbon-wood saplings bound with rushes and placed horizontally across the walls."
These may have formed a reinforcing to the clay or (and I think this is the explanation) battens for fixing the inside lining, bent out of place during the demolition.

**MR. E. BOURIAUD’S HOUSE, GEEHAN VALLEY, AKAROA:**

Built 1845. This house has been renovated since its building and is now of little importance from a point of view of design. The flooring 9" x 1" totara has worn exceedingly well showing the care with which timber was selected and seasoned. The upper floor is supported on 6" x 4" totara beams carefully joisted and not nailed to the trimmer around the chimney breast. The dado panelling doors and original sashes are similar in detail to those in the Stevenaux house.

**MR. E. GUILDON’S HOUSE:**

This is one of the original houses, its chief interest being the unusual dormer windows. These have a pitched roof and semi-circular headed sashes opening outwards. This first floor was used as bedrooms but having little head room is not now of great use.

**BRICKWORK:**

As has already been mentioned the bricks used for chimneys and various small buildings were made by Mr. Libeau in Akaroa. The brick stables he built on his own site are still standing. One side is a series of semi circular arched openings, one half brick in thickness - the inner thickness of brickwork is supported on wood lintels. The mortar is of clay but part of the work is protected by a cement rendering.
FRENCH HOUSES
AKAROA
BUILT 1840

STONE HOUSE
PURAU

VIEW FROM WEST

VIEW FROM NORTH

INTERIOR

HOUSE LEVAUD STREET

BRICK STABLES GREHAN VALLEY

GUINDON'S HOUSE
STONE.

PURAU HOMESTEAD:

This homestead designed by C. E. Fooke of Christchurch and built in the very early fifties has already been mentioned as the original home of the Rhodes family. It is still occupied and stands in a pleasant garden at the head of one of the larger bays in Lyttelton Harbour.

A verandah was added to the west front of the house some years after building and the present owner added a small wing on the east. The entrance door opens off the west verandah into a long hall containing a straight flight of stairs. The kitchen and study on the south side and the living room and dining room on the north side open off this hall.

The walls are of stone (cut from the hill above the house) set in clay and pointed with lime made from crushed shells. The roof is of imported slates. It is interesting to notice that the slater who did the new roofing decided that the original slates had the wrong face showing, and showed the reverse surface of the new slates. The main ground floor rooms are lit by casement doors, the first floor being lit by casement windows opening inwards.

Though the attractiveness of the external design is lessened by the carved gables, the pleasantness of the internal design is increased by the good detailing. The timber is pit sawn totara and matai cut on Banks Peninsula.
B. W. Mountfort quotation from Paul Pascoe's "The Study of the Early Buildings in the Canterbury Settlement of New Zealand."

"Mention must be made of the architect B. W. Mountfort. Arriving in one of the first four ships, he remained in the settlement until his death in 1894. He was trained in the office of Sir Gilbert Scott and after some years in Canterbury became Provincial Architect.

"By the light of the present day standard much of his design is open to criticism, but if one considers the contemporary times abroad, much is to be praised in his work. Knowledge and discussion of current work in those days was not as cosmopolitan as it is today, where in any part of the world one may study the best of English, Continental and American design. By comparison with others of his day, Mountfort is shown to have carried the torch well aloft to shed light upon the results of his activity."

Though his work mainly comprises Public Buildings, one of his most interesting works is the Union Bank, described below.
STONE HOUSES 1840 - 1870

SOUTH FRONT
UNION BANK BUILDING, LYTTELTON
ARCHITECT: B. W. MOUNTFORD

WEST: GABLE

HOUSE

DETAIL OF MASONRY IN HOUSE

DETAIL OF MASONRY IN STABLES

HOTEL

GROUP OF BUILDINGS NEAR HURUNUI BRIDGE
NORTH CANTERBURY

"HARLSTON"
SALTWATER CREEK

VIEW FROM ROAD
UNION BANK BUILDING, LYTTELTON:

Built 1867. This originally contained a house for the manager and a banking chamber which has, most unfortunately, been removed to make way for a garage.

The entrance is on the south and the hall into which it opens adjoins the living room, which has a bay window also on the south and overlooking the sea. It is divided from the dining room by a large pair of doors. A door on the opposite side of the hall originally opened into the banking chamber.

Two bedrooms and a bathroom facing west open off a passage at the end of which (some considerable distance from the living room), is the kitchen. A staircase 20" wide runs parallel with the passage up to bedrooms built in the roof. This has a balustrade of 1" square slats supporting a circular handrail. The external walls are 18" and 24" thick of local red volcanic stone, with the internal surface brought to a smooth finish with oley, then plastered or panelled. The openings have jambs and lintels of the same stone, carefully dressed.

The hall is panelled in Black Pine which is stained. The living room and dining room have wooden ceilings divided into square panels by moulded timbers, each of these squares containing a diamond shaped panel formed with smaller moulds. Against the ceilings there are deep wooden cornice moulds. It is still one of Lyttelton's pleasantest designs.
HARISTON, SALTWATER CREEK, NORTH CANTERBURY:

Built approximately 1880. This house is built of square coursed rubble cut to a fairly smooth face. The sandstone was carted from the Teviotdale Hills on the north side of Waipawa by the owner who was a carrier. The roof is of imported slates. Its squareness gives it a solid expression which is accentuated by the small area of glass. It is however, not unpleasantly proportioned. The wooden verandah with its iron roof, cast iron trimmings and brackets was added on the north some twenty years later. This verandah while spoiling the proportions of the house probably added to its comfort. The stone has weathered exceedingly well.

GROUP OF BUILDINGS NEAR THE HURUNUI BRIDGE, NORTH CANTERBURY:

This interesting group of sandstone buildings includes an hotel, a house and a large stable used for the coach horses. The material was "carted from the creek between the Hurunui Hotel and the foot of the Black Hills," by Mr. Ashworth who was the owner of "Hariston." This stone has a pleasant surface varying from cream to straw colour, and has weathered well in the clear air of the district.

HOTEL:

The entrance front is built of carefully dressed stone varying from 9" to 5' in length and in courses about 12" deep. As can be seen from the detail photograph, the stone has an interesting finely chipped surface with ½" joists between the blocks. The verandah has wooden posts and decorated lintols with stone paved floor now well worn.
The side and back walls are of snecked rubble. The windows have an 1½" flat surround and 9" jamb finished to a smooth surface. The windows on the ground floor (containing bars, dining room and kitchen, etc.) have double hung sashes, while the first floor (containing bedrooms) has casement windows with sashes opening inwards.

It is interesting to notice that the surround to the hotel windows is finished at the head as a mason's mitre while the pieces forming the band around the windows to the house are merely butted. The roof to the hotel and verandah is of corrugated iron.

**HOUSE**

The plan of the house is typical of the period but its stone construction is of interest. The north-west wall is of carefully squared blocks about 12" x 36" on the face, with ¼" joints, while the other walls are of snecked work, the stone being finished similar to that of the hotel. The windows are double hung, with surrounds and sills finished smooth as in the hotel. The lintols are solid blocks 5 feet long, 1 foot deep and 9 inches thick. The gabled roof with a lean-to over the back portion is also typical of houses of this period.

**STABLES**
The stone-work in this building is of random rubble the largest blocks being approximately 24" square and the joists 1½" thick. Rough ring arches about 15" in depth span the openings over the door and wooden grills with the heads squared by carrying the stone filling on wood lintols. The roof is of corrugated iron and the gables weatherboarded with totara. The detail photograph shows the wooden grill, supporting arch and typical stonework.
Vicarage: Lyttelton
Built: 1864

First floor plan

Ground floor plan

Vicarage: Lyttelton
Built: 1864

First floor plan

Ground floor plan

Pott's House
Governors Bay
Built: 1866

Scale: sixteen feet to one inch
STONE HOUSE, CASHMERE ESTATE:

Built 1870. This house is on the same estate as the cob house previously described. It was built for Sir Gracemart Wilson by Indian coolies he brought to New Zealand and was used as their home.

The rubble stone used is from the Fort Hills on the estate, and is Andesite from the Moon Bay quarries. The roof is of imported slates, the gables being finished with pierced timber work. The windows are double hung. It is a pleasantly proportioned building and having weathered exceedingly well, could still be used as a dwelling.

ORIGINAL VICARAGE: LYTTELTON:

Built 1864. In order that this house should overlook the harbour (magnificent views of which are obtained from the living room and study) it has been built to face south west.

The walls are of sandstone brought over in punts from Quail Island (a small island in Lyttelton Harbour) and are 18" and 21" in thickness, plastered internally. The 18" wall on the south west did not prove waterproof and was later cement rendered. The roof is of slates. The house is Victorian in design. The original entrance porch had three steep gables, probably giving a Gothic effect which, in the eyes of the designer marked this as an ecclesiastical building.

The gables are of pierced timber work. As can be seen from the photograph, the stonework and slate roof with the cement surface in contrast gives a very pleasant effect. The walls are of sneaked rubble.
Unfortunately the bathroom is in a separate building at the back of the house, making it rather inconvenient for contemporary living, though not unreasonable at the time of building. The plan is quite compact though it could have been considerably improved by giving the living room and bedroom, windows facing north.

POTTS HOUSE, GOVERNORS BAY, LYTTELTON HARBOUR:

Built 1866. The original house of timber was built a number of years before the stone house, which was constructed in the centre of the wooden building, an encircling verandah combining the two. With the addition of a bathroom (the existing one is in the wooden portion) this stone house alone would make an excellent home. It faces east and being situated at the head of Lyttelton Harbour, gives to the living room and bedrooms a superb view. The generous sized living room is quite pleasantly proportioned and has plastered walls and ceilings with a dado of totara panelling. The sliding sash windows have sills flush with the floor allowing the room to extend on to the verandah.

The large hall has a well designed semi-circular staircase connecting with the first floor comprising four bedrooms, landing and servants room - a separate staircase leads to the four servants bedrooms built in the roof. The original wood portion is lath and plastered and has casement doors opening on to the verandah. The north and south walls are 24" thick the other two being partially protected by the verandah are 19".
The walls of sandstone from Quail Island have weathered well, but isolated pieces of work, including chimneys facing south have weathered badly. Portions of the walling, mainly on and above the cornice of the east and west walls are a rich brown (the main work is a straw colour). This stonework contains iron, which having oxidised has stained the surrounding masonry.

This walling is of hammer dressed regular coursed rubble with ashlar cornices, architraves, cills and quoins. These moulded architraves are slightly arched over the windows and entrance door. The building of the stone portion has left in the roof of the wooden wing on the south, a valley with no outlet, with the result that water collecting there must either evaporate or seep into the room below.

When I saw this house in September it lay in a hollow of flowering cherry and peach trees, its cream and brown walls showing brightly against a background of green trees, hills and blue sea and sky. I felt that those who built it had left a fine memorial to the ability of this country's early architect craftsmen.

HEATHCOTE HOMESTEAD:

This house has recently been demolished, but its unusual use of slates makes it worthy of study. It was constructed of timber and lined with slabs of slate averaging 4'3" x 2'6" x 9/17" - some of these are still on the site where I photographed them. These were nailed to the studwork, the joints being covered by battens.
The interior lining was of horizontal boarding while the partitions were of large sheets of thin boarding fixed at the head and foot. The roof was continued over the surrounding verandah on to which the casement doors opened.
BRICK.

"MILLBROOK," CHRISTCHURCH:

As this house was built in 1863 it must have been one of the first large brick houses built in the Province. The exterior walls are solid 18" brick construction. The interior 4" studwork. The roof is of well varied Welsh slates. The brickwork and stone quoins have since been whitewashed and additions in timber have been carried out on the north side.

The south facade with its oddly shaped dormer windows (now relieved of their wooden trimmings) stands as originally built, a pleasant piece of Victorian design. The floors are of imported baltic pine, the joinery of totara. The house faced south, possibly to gain the then uninterrupted view of the Port Hills which has since been obscured by trees, and now overlooks one of the most beautiful gardens in Christchurch.

SMALL BRICK HOUSE, HEATHCOTE:

Built approximately 1870. Of the few brick houses built in the early days of the province the greater percentage like this Heathcote example were in districts near kilns. It contains hall, living room and two bedrooms under the main roof and kitchen and bathroom under the lean-to. The windows have casement sashes with horizontal bars. The brickwork painted red with the sashes and reveals of windows and door painted white, gives a very pleasant effect.
HOUSE SIMEON QUAY LYTTELTON

HOUSE GLOUCESTER STREET

FIREPLACE IN HOUSE MIDDLEPARK ROAD

HOUSES 1870-1900

THOMAS CARE'S HOUSE OXFORD TERRACE.
HOUSES OF THE LATER NINETEENTH CENTURY.

1870 - 1900.

It was during the last thirty years of the nineteenth century that the domestic work done in this country was freed from the economies of a pioneer community. Many of the early settlers had been successful in their farming (more especially after the introduction of refrigeration) and now rebuilt their houses. The prosperity of the farmers was accompanied by that of the townspeople who also built homes which they thought were more in keeping with their success.

Naturally they attempted to produce (generally in timber) the type of buildings they knew in their home countries and to display the newly gained wealth, owners decorated their homes with exaggerated ornament often imitating stonework in wood. At the same time however, there was a great improvement in the standard of comfort and hygiene.

The criticism of the decline in taste in architecture made by James Edward Fitzgerald in 1868 applies to an even greater extent to this period. He spoke of the "large dead walls of scantling and boards" built "to make the house look bigger than it is," "to gratify a false and ignoble vanity," and in comparing them with the type of house described in the earlier portion of the survey spoke of "those small unpretentious tenements which were built by the early colonists, some of them not ungraceful in their proportions all of them possessing the beauty of
simplicity and truth, devoid of vulgar pretension, tawdry vanity and inappropriate ornament."

Some of the smaller houses did retain the simplicity of earlier buildings, these being similar to the sod houses but with the addition of a lean-to over the kitchen at the back and a verandah on the front. In contrast to the rusticated weather boarding of the larger houses, these were lined with vertical boarding similar to that used for the house in Simeon Quay, Lyttelton (which also has interesting semi-circular headed doors opening on to the verandah) or with lapped weatherboarding similar to that in use today. These boards were in some cases moulded on the lower edge as in the case of a house in Gloucester Street, Christchurch which can also boast highly decorative wooden verandah posts and brackets.

The timbers generally used were totara for weatherboards, kauri for flooring, matal for beams and studs; kauri and totara have since become more difficult to procure and their use has been restricted to special portions of a building.

The photograph shows a typical fireplace from a house in Middlepark Road, Riccarton, built about 1870. The small iron grate is commonly found even in large rooms. The wood surround is quite well designed and having a clear polish shows to advantage the beautiful grain of this selected totara. Evidently people of those days had a greater appreciation of the beauty of some of our native timber, for today, wood that is to be polished is usually imported.
Houses 1870 - 1900

Livingstone's House, Riccarton Road

View from North
Westerna's House, Akaroa
Built 1880

Fireplace in Living Room

House Waimairi Road, Riccarton
HOUSE, OXFORD TERRACE, CHRISTCHURCH:

Built about 1875 for Thomas Cass, first Provincial Surveyor. The long low verandah joining the two gabled ends in which the windows run almost to the floor suggests that this house belongs to the earth on which it is built - an appearance considerably enhanced when the wisteria creeps along the verandah railing and droops into bloom.

Internally there is little of interest apart from the low windows and the decided fashion in which the servants' quarters are separated from the main rooms. A large portion of the timber was imported, the flooring being of solid Baltic brought out as ballast in some of the early ships. In design it suggests the simplicity of earlier buildings and does not ape the Victorian classic stone mansions, like many of its period.

HOUSE, RICGARTON ROAD, CHRISTCHURCH:

Built in 1875. In general outline this is similar to that built for Godley at Lyttelton with the addition of the decoration considered necessary to the gables, dormers and verandah and a bay window to the living room. The sharp pointed wooden apex decorations to the gables appear particularly dangerous. The sashes to the double hung windows have the central glazing bar peculiar to work of the period.

Though many houses of this size have a straight flight of stairs in the passage, this has a staircase in an inner hall off the entrance. The bedrooms are built partly in the roof and have coved
ceilings. The roof is of grey slate and the weatherboards are painted Indian red. If minor details are ignored, this house set in a very pleasant garden among matured trees presents a pleasant appearance.

HOUSE, AKAROA:

Built about 1880, for Mr. Westernra, then manager of the Bank. Because of its formal planning and exceptionally high stud (12 feet) this house, in contrast to the greater percentage of those already studied, gives an impression of spaciousness. The central hall, on either side of which is the living room and dining room, contains a wide staircase with turned balusters and heavy carved newel at the foot.

The basement doors (above which are large fanlights) to the living and dining rooms open on to the front verandah on the north, while a bay window on the west wall of the living room has a magnificent view over the Akaroa Harbour. This room also contains a large open fireplace (it is usual to find small iron grates in houses of this period) with a wooden surround of Gothic detail. The kitchen and offices are on the south with bedrooms and bathroom on the first floor.

Elevationally this house follows the fashion of the period, for though of timber, its detail is that of a stone house. The deeply projecting eaves are built out with brackets to form a cornice which on the north elevation is carried up over a central projecting portion to form a pediment. The first floor windows to this portion have arched heads (with wooden key-stones)
springing from wood pilasters which form the facing pieces to the jambs and mullions.

The other first floor windows have cornices supported on deep consoles, the verandah below having wooden posts and iron brackets supporting the shaped corrugated iron roof. The flooring is kauri, the studs and beams matai and the weatherboards totara, all the timber being rough sawn on the Peninsula.

HOUSE, WAIMAIRI ROAD, RICCARTON:

Built 1880. The front of this house is made to face the road on the east so that only two rooms get north sun. The living room and dining room are on either side of a central passage which contains a flight of stairs leading to the three bedrooms on the first floor. The kitchen, bathroom and washhouse are under the lean-to portion on the west.

The walls are of timber and lined with rusticated weatherboarding. As this was a cheaper type of house it had to be built without the usual decoration; however, it was evidently considered necessary to have quoin blocks on the front even though these do not return at the angles. The sliding sash windows have the usual central glazing bar and wood stops. The front door has semi-circular headed wood panels and sidelights containing coloured glass. The gabled roof is of corrugated iron. Because of their unrelieved boxiness these houses appear to sit very stiffly and bleakly in their surroundings.

It was apparently the custom for these houses to face the road, the north sun being ignored. In the case of the school house at Riccarton where the section faces south, the architect (who had, by decorating this
type of house attempted to make it appear Gothic like the school) placed the building with its side to the road, thus facing east.
HOUSES 1900-1914

TYPE A

DETAIL OF TYPICAL GABLE DECORATION OF THE PERIOD

TYPE B

T. HOUSES
RICCARTON RD
BUILT 1905 & 1910

VIEW FROM EAST
"DARESBURY ROOKERY" FENDALTON
ARCHITECT: S. HURST SEAGER

VIEW FROM NORTH

VIEW FROM NORTH
HOUSE RICCARTON ROAD
ARCHITECTS: CLARKSON AND BALLANTINE

VIEW FROM EAST
HOUSE SCARBOROUGH HILL
ARCHITECT: S. HURST SEAGER
HOUSES OF THE EARLY TWENTIETH CENTURY.

1900 - 1914.

By the beginning of this century, towns were expanding rapidly and new suburbs - now quite a large section of the residential areas - were forming. The houses built, generally without any architectural advice, were often in plan a variation of the T type. Externally, these adopted the fussy inappropriate detail of the larger houses of the preceding period and lost the good proportion of many of the smaller houses already described.

Of course a small percentage of the work was designed by Architects - indeed it was during this period that architects were first employed by the smaller house owners, Mr. Hurst Seager in particular doing a large amount of this work.

Owing to improved shipping communications, overseas influences were of considerable importance. Features of the T house were copied from Australian and Canadian examples and the American bungalow first made its appearance. Many of the smaller houses done by Mr. Hurst Seager were of this type and these appear to be the themes on which our contemporary builders form their variations. It is most unfortunate that an architect should be indirectly responsible for so much ugliness.

Of more constructive value were the ideas brought by architects trained in England where William Morris, Norman Shaw, C. F. A. Voysey and others had so successfully led a revolt against the Medieval and Classic revivals of Victorian times.
The few well designed houses built in New Zealand at this time were inspired by this movement. Unfortunately technical improvements were often misused and misapplied. Though this is not so often the case in Canterbury, the public mind still retains the idea then existing, that design in order to be good must be imposing and ornate.

**T HOUSES:**

The name "T" was derived from the original plan, the front verandah and central passage forming the tee; though later it was more often used to describe houses with square or L shaped plans. The two houses described below are typical of the work done without architectural advice.

**TYPE A:**

This is a good example of the T house of the period. Fortunately it faces north - for had it faced south the plan would have been exactly the same - the verandah, sitting room (as these rooms were always called) and main bedroom enjoying the north sun. In a house facing south the kitchen, bathroom and washhouse received the north sun.

The verandah has cast iron brackets and pierced panels over the openings between the posts. The bay window to the sitting room is crowned by a gable decorated with shaped woodwork; the double hung windows are themselves decorated at the head with cornices on brackets and have heavy sills on consoles. There are brackets to the eaves and coloured glass on either side of the artificially grained front door.
Internally, the rooms have high ceilings, these and the walls being plastered; externally the walls are weatherboarded and finished with angle and cover stops. This example was built in 1905.

**TYPE B:**

This house has the same type of plan, the rooms opening off a central passage. The two bedrooms, sitting room and kitchen are under the main roof while the scullery and bathroom are under the lean-to portion. The walls internally are lined with boarding, scrim and paper and externally are weatherboarded. Some of the interior joinery including doors, is of kauri (now too expensive for such work). The detail is similar to that in Type A, but the simpler exterior (for economy) makes this a better design.

"DAIKS BURY ROOKERY," FENDALTON, CHRISTCHURCH:

Built 1900. This was designed by Samuel Hurst Seager whose work played such an important part in determining the development of domestic building in Christchurch. Though born in England he was educated in Christchurch, where he practised for many years. His work however must have been greatly influenced by the architecture he saw on his many travels.

The design in this case is Tudor, reproduced very carefully. The ground floor has brick walls, the first floor walls being finished with stucco and timber panels. The roof is of plain tiles imported (as were the bricks, oak panelling and fittings) from England. The casement windows have leaded panes. The owners found it necessary to have a verandah added for shelter from the north west winds, the house
otherwise being as originally designed. The hall is panelled in kauri, while the dining room (a careful reproduction of a Tudor room) has oak panelled walls and decorated plaster ceiling. The house is considerably enhanced by its beautiful grounds.

HOUSE, RICCARTON ROAD:

Built about 1910 for Mr. A. E. Kincaid, the architects, Clarkson and Ballantyne. Though this house now appears to be worthy of note merely because of its size, at the time of building its clear outline and simple detail must have been in direct contrast to the pettiness and confusion of existing work. It is thus one of the earliest examples in Christchurch of the new architecture which sprang up in England in reaction to Victorian ideals.

The slate roof, brick walls with tile decorations in the gables, white stone columns and window surrounds and large sheets of clear glass give this a fresh appearance and suggest a more recent date of building. This firm of architects was responsible for a number of the more pleasently designed houses of the period.

HOUSE, SCARBOROUGH HILL, SUMNER:

Designed by Samuel Hurst Seager. This is an example of the type of house whose elevational treatment is so often reproduced by present day builders. Its plan is quite interesting, in freeness, suggesting the influence of such architects as Frank Lloyd Wright.

The entrance door opens into a sun-room off which the main rooms open. As it has windows to the north, east and west with excellent views of hills,
beach, sea and mountains, it is the general purpose room of the house. The living room is on the east, the kitchen on the south, the bedroom on the west and the bathroom on the south adjacent to the bedroom.

The walls are of wood, the main surfaces weatherboarded and the sun-room walls lined with vertical boarding. The roof is of iron. On the north the sun-room has a large window of low glass line with horizontally sliding sashes, while the main windows are of the casement type. Unfortunately the steep hill on which the house is built makes photographing difficult.
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**STANDARD OF HOUSING AND EQUIPMENT OF DAIRY FARMERS**

*Suburban street showing builders' houses*

*Builder's house showing influence of architects' work*
Immediately after the Great War changes took place in both the design and construction of houses and their fittings. Most architects had seen the work then being done in Europe, for most of those who had not been to the War travelled to the old world immediately on its completion.

They were mainly influenced by the new English domestic style of architecture begun by the teachings of William Morris and now continued by such men as Guy Dawber and Edwin Lutyens. In travelling too, these architects saw for the first time examples of some of England's loveliest architecture done in the Georgian Period and a number were so impressed that practically all their work whether in wood or brick is designed in the Georgian manner. It is interesting to notice the great improvement this made in the work of some architects who were already in practice.

Of course many of the early sod, cob and timber houses suggest in their proportions the influence of Georgian or Regency architecture, reproduced in new materials and with the rigid economy necessitated by the difficulty of procuring these materials.

The work done in Europe by such men as Adolf Loos, Peter Behrens and August Ferret and in America by Frank Lloyd Wright, seems to have influenced few New Zealanders. The designs of Herbert Munnings, who had been in India before coming to Christchurch do however suggest that he was interested in this
Houses 1914 - 1941

Concrete House
Kilmarnock Street
Riccarton

Architects
Collins, Harman & Munnings

View from North

View in Living Room

View from Street

View of Entrance

Fleming's House
Park Terrace
Christchurch
Architect C.W. Wood

Fireplace in Living Room
modern architecture. The reinforced concrete house which he did for Mr. F. Wilding while working with Collins and Heman must have been of very advanced design especially for Christchurch.

Its external detail now appears rather coarse but its simply finished interior loses nothing by comparison with present day work.

A friend of Mr. Wilding was so impressed with the design and its earthquake resisting properties that he decided to use this construction for his home in Hackthorne Road, Cashmere. Unfortunately at this time it proved too expensive so that resistance to earthquake was ignored and the house built of concrete blocks. The design too, was rather disappointing and not a worthy successor to the Wilding house.

Of recent years most architectural students have been able to travel to England and either attend a school of architecture or work in English architects' offices, and naturally their ideas are greatly influenced by the work done there. The houses designed by these men on their return to New Zealand have shown a marked tendency towards expressing in local materials, the teachings of such architects as Le Corbusier and Frank Lloyd Wright.

As has been the case throughout the history of domestic work there are far more houses being built without architects' advice than with it, and the standard of design is accordingly low. Occasionally a builder who has worked for architects produces a house of commendable proportions like the one in Rattray Street here illustrated.
Generally speaking, these houses have reasonably convenient plans, are well provided with modern utilities and labour saving devices and are set in neatly kept gardens. The main faults are the unnecessarily high glass line of the windows, the facing of the main rooms towards the road in preference to their facing the sun and the over-decorated exteriors. It appears, unfortunately that the average citizen is prepared to accept without criticism the creative efforts of the average builder.

The diagram shows the standards of housing and household equipment of dairy farmers, based on a survey of 450 typical examples made by the social Science Research Bureau. Under the head "No. of rooms per dwelling" it must be understood that "room" includes bedrooms living and sitting rooms and kitchens used for living purposes, but kitchenettes, pantries, sculleries, washhouses, bathrooms and similar rooms are excluded from consideration. It is interesting to note that 99 per cent of the houses inspected were wooden in structure.
HOUSES THE DESIGNS OF WHICH WERE BASED ON THE NEW ENGLISH DOMESTIC ARCHITECTURE BEGUN BY THE TEACHING OF WILLIAM MORRIS.

BRICK HOUSE, PANANUI ROAD:

Built in 1932. This was designed by Hart and Reese for Mr. L. Cordery who being interested in music, desired a large music room as well as a billiard room in a house of normal size. The kitchen having large windows to the north is also used as the Maids' Dining Room.

The cavity walls are of local brickwork (4½" outer skin 2½" cavity with 9" inner wall to ground floor and 4½" to first floor) strengthened with bonding wire and ties. The pointing mortar is composed of equal quantities of white sand, quarry shingle and cement and the bricks below the damp-proof course are set in cement mortar. The keystones and consoles to the entrance and bay window arches, as well as the panel pieces on the wall to the road are of Redcliff's stone. The concrete lintels and columns are reinforced with ¾" steel rods of square section. The steps have nosings of brick-on-edge.

The timber framing is of Rimu with wall plates and sleepers of Black Pine; the sashes also are wooden. The roof is of "Welsh Countess" slates.

The music room, hall and billiard room have ornamental fibrous plaster ceilings and lath and plaster walls; the walls enclosing the staircase are panelled in wood.

Although this house has now been built twenty years, it appears quite new, its openness and
freshness suggesting qualities which are important today. The brickwork shows to advantage in a garden comparably neat and gay with flowers.

HOUSE, PARK TERRACE:

Designed by Cecil Wood, in 1920, for Mrs. Fleming. This house is of English domestic design, the attractiveness of which is considerably increased by the colour and texture of the materials.

The plan is an informal one with the living room facing west, the sitting and dining rooms facing north and the kitchen and offices on the east and south. The external walls are of cavity brickwork, sixteen inches thick on the ground floor and eleven inches on the first floor; the ground floor partitions are of nine inch brickwork.

The living room has a low curved plaster ceiling, cream plastered walls and a white limestone fireplace of tudor design, with carvings of leaves and grapes in the spandrels above the fireplace opening.

The hall, staircase and dining room have panelled walls of oiled Rimu. The sitting room has plastered walls and a stone fireplace with a wood bolection moulded architrave. The brickwork of local stocks gives a dull reddish surface.

The shingles in the gable are painted chocolate in contrast to the white sashes, while the roof is of hand made shingle tiles (imported from Sydney), giving a mottled surface of dull orange and brown.
"LONGBEACH," ASHBURTON:

Built in 1939 for Mr. J. E. Grigg, was designed by Helmore and Cotterill. The house of English domestic design, suits its surroundings admirably - as it replaced an original homestead destroyed by fire, it had the advantage of being built in grounds of beautifully matured gardens and trees.

The plan is an informal one. An entrance terrace leads into the main hall off which opens the dining room, study, living room and a lobby to a suite of two bedrooms and a bathroom. The staircase is off an inner hall. A verandah on the north connects the day nursery and a loggia opening off the living room. The kitchen and maids' sitting room are on the south west and form with the ground floor bedroom wing, an entrance courtyard. The main bedrooms, night nursery, maids' bedrooms and bathrooms are on the first floor, some of them being built in the roof and lit by dormer windows.

The external ground floor walls are of cavity brick construction (4½" brick, 2½" cavity and 4½" brick), the facing bricks being red Ashburton wire cuts, specially picked to give a slightly varied surface. The partitions are of 4½" brickwork. As many of the bricks from the original house were in good condition, they were used in the construction of the new.

The timber walls and gables to the first floor are studded externally with Pacific Cedar shingles oiled and stained dark brown; the roof and cheeks of
the dormer windows are covered with similarly stained shingles. The loggia and verandah have brick-on-edge paving. The wall plates and sleepers are jarrah, the framing generally being heart Rimu.

The boxed frame windows have redwood shutters painted ivory white. Internally, the walls are lathed and plastered. The living room fireplace has a bolection moulded surround of cream Mt. Herbert sandstone with redstone margins, lining, hobs and hearth and a wood mantlepiece over the stonework. The dining room fireplace has an eight inch moulded architrave of sandstone with key-block in the centre and a wood surround.

There is a central heating system throughout the house.
HOUSES 1914-1941

"LONGBEACH"
ASHBURTON
ARCHITECTS
HELMORE & COTTERILL

VIEW FROM GARDEN

"THE LONG HOUSE"
PAPANUI ROAD
ARCHITECT: J. GUTHRIE

VIEW FROM EAST

VIEW IN HALL

HOUSE
PARK TERRACE,
CHRISTCHURCH
ARCHITECT: C.W. WOOD

VIEW FROM WEST
"THE LONG HOUSE," PAPANUI ROAD, CHRISTCHURCH:

Built in 1914 for an American family who wished to reproduce the type of Colonial home they knew in their own country. The architect was Jack Guthrie, his design being no doubt greatly influenced by his client's ideas. The result is highly successful.

The dining room and living room are on either side of the hall, while directly opposite the entrance door, the staircase sweeps up to the half landing where it divides and returns as a twin flight to the first floor landing. The moulded handrail is supported on turned balusters.

The walls of the long living room are lath and plaster whose surface is formed into panels with fibrous plaster mouldings. The fireplace of Georgian design is built of stone.

The entrance door is flanked by flat wooden pilasters supporting a shallow entablature and pediment, also of wood. Above this is a semi-circular headed window which like the other six windows on the north east elevation is of the boxed frame type. All sashes are painted white, the front door and shutters to the first floor windows being painted green. The weather-boarded walls are white. Though of flat pitch, the widely projecting gabled roof is of grey slates.
HOUSE, PARK TERRACE, CHRISTCHURCH:

Built 1923, for Mr. G. Weston and designed by Cecil Wood. This house is built on a corner section facing west and overlooks a formal garden screened from the street by high brick walls. The south wall of the house is built on the street boundary.

As the drawing shows, the plan of the entrance block is formal, while the kitchen wing is most informal. The external walls are of local bricks and of cavity construction, 16" thick on the ground floor and 11" thick on the first floor. The floor joists are of heart rimu and supported on wall plates and sleepers of jarrah.

The rooms are plastered, the hall and living room wall surfaces being divided into panels with fibrous plaster mouldings. The hall is finished in white. The living room, (the walls, architraves and skirtings of which are cream,) has a fireplace of Georgian design, its green serpentine slab having a moulded architrave and mantel shelf of polished maple.

The west front is an excellent example of Georgian design, the red brick walls, slate roof, white double hung windows and white columned entrance porch giving it an air of restful and dignified beauty.
GROUND FLOOR PLAN

BISHOPS COURT CHRISTCHURCH

ARCHITECT  G. W. WOOD

SCALE : SIXTEEN FEET TO ONE INCH
BISHOPS COURT, PARK LANE, CHRISTCHURCH:

Built in 1928, was designed by Cecil Wood. In planning the house the architect had to keep in mind that though a private home, this would be required to accommodate large crowds of people on social occasions as well as acting as a hostel for some of the theological students. The group comprises house and garage block (built to enclose a courtyard) and a small chapel.

The external walls are of 14" brickwork, the ground floor partitions of 9" brickwork, the porches of reinforced concrete, with all external surfaces rendered in white cement. The framing is of Oregon. The roof of slates gives a mottled surface of green, purple and brown.

The hall is lit by a Palladian window and has white walls divided into panels by fibrous plaster moulds. The jarrah flooring is lined with black and cream squared "rubline." The panelled doors to the hall are painted white and the staircase has white turned balusters supporting a polished handrail.

The living room has semi-circular headed windows with cills at skirting level and casement doors opening on to a porch. Fibrous plaster moulds divide the walls into panels which are painted a buff colour. The moulds, wooden architraves and skirtings, fibrous plaster cornice and flush ceiling are painted white. The Adam type wood fireplace is painted white and has a red brick lining. The floor is of Queensland maple.

The study has panelled walls of Queensland maple and a white plaster ceiling supported on dark stained beams. The fireplace is of white sandstone
with a carved wooden architrave and moulded shelf supported on carved brackets; it is flanked by recessed bookcases with glazed doors. The kerb and hearth is of grey granite and the floor is of stained rimu. The window and casement door are similar to those in the living room and overlook the terrace. The morning room is similarly finished, the panelling of American oak having a much lighter appearance than that of maple.

The dining room walls are panelled and painted in a similar manner to the living room. Two plaster beams, the depth of the cornice, divide the ceiling into three panels. The fireplace has a Mount Somers stone slab, mould, frieze and shelf, the stone varying from cream to grey in colour, and a hearth and a kerb of grey volcanic stone. A covered way with brick paving leads from the dining room to the chapel. This has dark panelled walls, semi-circular headed windows, with white plaster reveals and white plaster arched ceiling with decorated fibrous plaster ribs.

The first floor bedrooms have built-in dressing tables, wardrobes and wash basins, while the second floor bedrooms which are used by the students have built-in wardrobe and dressing tables. The woodwork is painted.

The terrace on the north is paved with Halswell stone flags. The roofs to the porches form balconies to the main bedrooms, two of the smaller rooms having projecting balconies with black wrought iron balustrades. The casement doors have green
shutters and the dormer windows lighting the second floor bedrooms have cheeks of slates similar to the roof. The finish to the walls and roof of the house is repeated in the chapel, the roof of which is crowned by a small square cupola.

These buildings are set in beautiful grounds of trees, lawns and gardens, the whole forming an impressive group - a fitting and dignified residence for the Bishop of Christchurch.

HOUSE, GLANDOVEY ROAD, CHRISTCHURCH:

Designed by Helmore and Cotterill in 1932. This house is built some distance back from the road and has a drive which sweeps past the entrance into a garage court screened from the entrance porch by a whitewashed brick wall. This entrance leads into a long hall, off which open the main rooms including the staircase and sun porch.

The walls are of timber construction, weather boarded externally and plastered internally. The living room has panelled walls of applied moulding and is painted pale apricot. On either side of the fireplace, which is of green marble with a moulded architrave, are book recesses painted green. The dining room walls are finished in a glazed parchment. Here again the fireplace is of green marble with a bolection moulded surround and has on either side semi-circular headed recesses containing low cupboards.

Opening off the living room on the north front there is a paved stone terrace, enclosed in a low whitewashed wall. This terrace forms an introduction to the grounds which on this side run down to the river.
VIEW FROM EAST

FIRST FLOOR PLAN

GROUND FLOOR PLAN

HOUSE GLANDOYSEY ROAD TEDDINGTON

ARCHITECTS: HELMER & COTTERill

Scales: Sixteen feet to one inch
This house is built in the French Colonial style. The Pacific cedar weatherboards (laid to a wide gauge) are painted white, the sashes and casement doors white, the shutters turquoise blue, wrought iron balustrades black, and the Pacific cedar shingle roof stained a dark brown. The entrance elevation with its semi-circular porch, wrought iron balustrades, large ground floor windows and small dormers appearing through the brown shingle roof, is a particularly attractive piece of design.
HOUSES, THE DESIGNS OF WHICH WERE INFLUENCED BY THE WORKS OF MODERN ARCHITECTS IN EUROPE AND AMERICA.

HOUSE, KILMARNOCK STREET, RICKCARLON, CHRISTCHURCH:

Built in 1922 for Mr. F. Wilding. The architects were Collins and Harman, though obviously the design was considerably influenced by Mr. Munnings who worked with this firm and who had been practising in India.

The entrance on the east leads into a staircase hall off which opens the living room, study and dining room, the kitchen facing the road on the south. The staircase which has a semi-circular shaped half landing (allowing the rounded tower on the exterior) leads up to the first floor bedrooms and bathroom and continues up to the flat roof.

The construction is most interesting as it is one of the earliest concrete houses in the province. The architect desiring an earthquake resisting building decided on a monolithic construction which would allow the shifting of the building in one piece - were it possible to do so. The ground floor walls are 5" thick and the first floor 4", both being reinforced with heavy gauge crimp-wire reinforcing.

The ground floor is wooden, the first floor and roof slabs being of reinforced concrete supported on beams reinforced with steel rods. The first floor is lined with cork linoleum and the roof finished with a dressing of sand and fine shingle on malthoid. External walls are rendered, internal walls are plastered. The sashes are steel.
The L shaped living room has a simple concrete fireplace, the slab and hearth being rendered in grey cement and the fire burning on a square of firebrick lot flush into the hearth. The walls are distempered cream and the woodwork is painted to match. This room opens on to a paved terrace of Halswell stone flags leading into the garden.

Though the external detailing, more especially of the projecting bands and balconies (probably necessary in India) is rather coarse, the house is an interesting and courageous design for its period.

Unfortunately Mr. Munnings's progressive ideas were not appreciated in this country, and he found it necessary to go to Australia to achieve success in his work.

HOUSE, CLYDE ROAD, FREDALTON :

Built in 1935 for Mr. H. S. Williams, the architect being W. H. Trengrove. This house is set back from the road and is entered from a concrete terrace to the living room.

The lounge, dining room and breakfast room are grouped round a large hall containing the staircase to the bedroom floor. The first floor comprises seven bedrooms, two bathrooms and sun decks.

The walls are of timber, lath and plastered on the inside and lined on the outside with rough sawn weatherboarding. These weatherboards are bent around the semi-circular wall to the breakfast room. The main roof is of slates and the flat roofs are of copper bearing galvanised iron. The windows have wooden frames and sashes containing large sheets of clear glass.
HOUSE, SCARBOROUGH HILL, SUMMER:

Built in 1938 for Mr. L. Hansen a Dane, who claims the architect, W. H. Trengrove, has produced one of the best houses in New Zealand. It has a fine view over the sea and estuary towards the mountains.

The main rooms open on to a verandah which forms the front entrance to the house. The walls are of timber and lined on the inside with lath and plaster and on the outside with weatherboarding. As the house is built on a slope, the main floor on the north is well above the ground; the timber framing to the base being lined with vertical boarding and cover battens.

A wooden staircase leads up to the verandah. The sashes are of wood with special metal split bars to the living room windows. The roof is of corrugated iron. Beneath the large window in the living room is a low bookcase forming a wide sill to the window. The two bedrooms on the north have casement doors opening on to the verandah.

The house has a very fresh appearance. The weatherboards are painted cream, the base chocolate, the sashes white and the roof orange.

HOUSE, RATTRAY STREET, RIGGARTON:

Built in 1937 for Doctor Helmore. The architect was W. H. Trengrove. The house is built on a corner site with the private rooms on the east and north and the doctor's consulting rooms on the west and south. The consulting rooms have a separate entrance and for the doctor's convenience a door into
the hall of the house.

The hall has a curved wall of glass bricks against which the staircase sweeps up to the first floor. The living room and dining room open off this hall and a passage leads to the kitchen. The doctor's rooms comprise waiting room and surgery. On the first floor there are a sun deck, bathroom and three bedrooms with built-in wardrobes and wash basins. A covered way connects the house with the garage.

The external walls are of cavity type - two three inch reinforced concrete walls with a three inch cavity between. The floors are of timber and the window frames and sashes of wood. The rooms are plastered and simply finished. The main rooms have polished flush panel doors with the remaining woodwork painted in colours to match the wall surface. The living room has casement doors opening on to a paved terrace. The staircase has metal standards supporting a polished handrail, the sun decks having pipe railings.

The house is centrally heated, the heating chamber being in a small basement below the kitchen. The external walls are finished in cream cement, the sashes are painted cream and the frames, guttering and railings painted black. There is a wide overhang to the flat roof.
HOUSE GLANDOVEY ROAD
FENDALTON
ARCHITECT R. F. D. HARMAN
SCALE SIXTEEN FEET TO ONE INCH

VIEW FROM STREET

HOUSE IN WOOD
FENDALTON RD
ARCHITECTS HOLLIS & MARTIN
HOUSE, GLANDOVERY ROAD:

Built in 1937, for Mr. Dearsley. This house is very similar to a house in Berlin which the clients admired and which they asked their architect R. S. D. Harman, to reproduce with certain small alterations.

The main room across the north front is 37' 6" x 14' 0" divided into sections for living room, dining room and study. Large doors open on to a concrete terrace facing north. The external walls are in two thicknesses of three inch reinforced concrete with a three inch cavity between. The ground floor partitions are of concrete. The internal floors are of timber but the projecting balcony to the bedrooms is of reinforced concrete, cantilevered out from the wall - the steel column was fixed after the concrete had been poured.

The parapet to the balcony is capped by a flower box of fine concrete 1½" thick supported on small rods. Internally the walls are plastered and painted. The main room has flush panelled doors and cupboards of veneered Queensland maple, french polished, painted architraves and skirtings and a fireplace with a jointed cement surface.

The room is appropriately furnished. The hall, connected to the lobby by a sliding door contains a staircase with chromium plated handrail above the concrete balustrade. The house is rendered in white cement and has window and door sashes painted black.

The owners have reproduced the surroundings of the Berlin house as closely as possible, this one overlooking a lawn planted with silver birch trees.
VIEW FROM EAST

FIREPLACE IN STUDY

GROUND FLOOR PLAN

HOUSE: SCARBOROUGH HILL SUMMER

ARCHITECT: HELMORE & COTTERILL

SCALE: SIXTEEN FEET TO ONE INCH
HOUSE ABOVE THE CLIFFS ON SCARBOROUGH HILL, SUMNER:

Built in 1940. This was designed by Helmore and Cotterill for Mr. W. H. Mordant, an Englishman who was horrified by the large number of wooden houses built in New Zealand. To him they appeared so temporary that he was determined to build in stone from the hill on which he was building.

The main objects in planning were to give each room the benefit of magnificent views as well as correct orientation and to give in this exposed position a sunny terrace, sheltered as much as possible from the many winds which sweep the hill. This has resulted in the T shaped building which gives shelter for a terrace in its north west angle and has been responsible for the unfortunate position of the kitchen in regard to the dining room.

As the view and sun are away from the road there are very few and small windows on the entrance side, this being responsible for the remark made by local busybodies, "There's something suspicious about that house - no windows to the road."

The external walls ten inches thick are of local stone (averaging four inches to six inches in thickness) with a backing of reinforced concrete and have an inside studding of 3" x 2" material to support the internal finishing materials. The concrete foundations were first laid, off which were built the external stone wall and the 3" x 2" studding, lined on the inside with boarding (to act as permanent boxing) and a protecting layer of malthoid. The rods were fixed in position and the concrete poured.
The internal partitions are of timber.

The main rooms are panelled; the study in American redwood, the dining room in large sheets of Queensland maple ply with fine half-round cover fillets and the bedrooms in rimu. The billiard room and dining room open on to a large concrete terrace, sheltered on the west by a stone wall in which is a large circular view window overlooking Summer and on the north by large sliding glass screens in steel frames. All sashes are steel. The low eaves giving horizontal emphasis, the walls of stone from the site and the gently sloping roof of Welsh slates tends to make this a house "of the hill."

HOUSE, FENDALTON ROAD, CHRISTCHURCH:

Built in 1940 for Dr. Simpson. The architects, Holliss and Hart were asked to build a house which followed in design an American home the clients admired. Its plan is most interesting in that it includes a caravan shelter which will allow the use of the caravan as a spare bedroom until another room is added. The doctor decided to use Vita glass imported from England - an unusual feature for New Zealand homes.

The semi-circular bow window in the living room overlooks the lawn which slopes gently down to the river. The foundations, terraces and caravan shelter floor are of concrete, and the framing generally of 4" x 2" rimu. Externally, the walls are lined with 10" x 1" rough boarding and 4" x 1" cover battens with a lining of building paper against the studding - this
is slightly more expensive than the normal weather-
boarding but was used to reduce the length of the
house.

The walls internally are lath and plaster
and the flooring rimu. The roofs to the porch,
caravan shelter and bay window are supported on
galvanised wrought iron columns; the windows have
metal sashes set in wood frames. The roof of low
pitch is covered with corrugated iron.

The living room, bedroom and study walls
and ceilings are finished with a cream matt-surface
paint while painting in other rooms has a gloss surface.
The living room is simply finished and has a black tile
fireplace. The main doors are of the flush panel type,
polished.

Externally the white vertical boarded walls
and steel sashes and the neat concrete paths and fences
give a solid and fresh appearance which contrasts
pleasantly with the drooping silver birches and the
quivering surface of the river.

A PAIR OF SEMI-DETACHED HOUSES, LEINSTER ROAD,
CHRISTCHURCH.

Designed in 1938 by Helmore and Cotterill.
As these are built on a comparatively narrow site
their plan is very interesting more especially as their
three bedrooms allow for a family of moderate size.

The living room with dining alcove gives a
room sufficiently large for entertaining in a fairly
small house. Rimu timber (4" x 2" studs) was used in
the general construction, the division wall being of
9" brickwork. The weatherboards are of Pacific cedar
set to a wide gauge and bent on the rounded north wall. The flat roofs are of malthoid on felt, boarding and wooden joists.

Internally the rooms are plastered and finished cream. Externally the weatherboards are painted apple green, the front and garage doors cherry red and the gutters black.

In restricted areas this is a good means of housing people who object to living in the normal type of flat and who desire a private garden.

The grass plots and low privet hedges with no gates on the entrance side give a neatness and uniformity so lacking in our average street.
HOUSE, CARLTON MILL ROAD, CHRISTCHURCH:

Designed by G. Griffiths for himself.

In planning this house the architect has included the garage in the main block of the house - a practice which the Bylaws do not now allow in wooden construction.

The entrance to the house which is some distance from the road, is on the north, while the river Avon which forms one boundary to the site is on the south. The main room (living and dining) was thus planned to face north, but with a view over the river and the park beyond. As the garage has a lower stud height than other rooms on the ground floor, the bedroom over it opens off a half landing. The rooms are simply finished. The main room has a fireplace of red and green New Zealand marble and is suitably fitted with neat modern furniture.

A very interesting and important feature of the house is the large window - the full width and height of the wall - lighting the hall, staircase and landing. The general framing is of rimu, the walls weatherboarded and the roofs of galvanised steel in flat sheets.

The weatherboarding is painted tangerine, with the wooden sashes and eaves fascia picked out in white.
VIEW FROM NORTH.

FIRST FLOOR PLAN.

GROUND FLOOR PLAN.

HOUSE PARK LANE
TIMARU

ARCHITECT: M. HALL

SCALE: SIXTEEN FEET TO ONE INCH.
HOUSE, PARK LANE, TIMARU:

Built in 1940, and designed by the architects Herbert and Humphrey Hall (father and son) for themselves. Because of the slope of the site the house is some distance above the road, thus its rooms which have windows of low glass line are quite private. It is planned so that the hall (in which there is a spiral staircase to the first floor bedroom and sun deck) divides the living portion from the sleeping portion.

The spiral staircase is of steel and came from one of the early homes in the district. The hall is lit on the south by a curved wall of glass bricks and on the north by panels of glass bricks on either side of the glazed front door.

The external walls are of cavity brickwork with reinforced concrete beams, columns and entrance canopy. The R.S.J. over the living room window is cased in concrete and all external surfaces are rendered in white cement. The bedroom wing has a sloping corrugated iron roof behind the parapet on the north and east walls. Window frames and sashes are of wood.

The dining alcove is divided from the living room by a low bookcase and cocktail fitting. It has a window overlooking the road on the west, while the living room has a window running the entire length of the north wall and overlooking the south portion of Timaru Bay.
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The dining alcove is divided from the living room by a low bookcase and cocktail fitting. It has a window overlooking the road on the west, while the living room has a window running the entire length of the north wall and overlooking the south portion of Timaru Bay.
The walls are plastered and painted cream, the doors and fittings are of polished plywood and the fireplace of small red bricks set in white cement. The passage to the bedrooms has a long cupboard fitting under the windows and the first floor bedroom is fitted with a shower.

The flat roof over the living portion forms a sun deck. It is screened by walls on the east, south and west, has a roof to one section, beams to take an awning on another section and open on the north front. The base below the living room is of random rubble and the recessed wall under the bedrooms is painted blue to silhouette the columns.

Though the plan is a successful application of the teachings of Le Corbusier whose works have obviously influenced this design, I feel sure that the French architect would not approve of this hybrid construction.

HOUSE:

Designed in 1941 by Paul Pascoe for Mr. and Mrs. Harris. In the plan the living portion and the sleeping portion are separated, but the passage to the bedrooms is used as an entrance hall. The entrance is off the terrace which is sheltered by the angle of the house and a screen wall.

The walls and partitions are of rimu studding lath and plastered on the inside and weatherboarded on the outside. The terrace and foundations are of concrete.

The dining and living portions of the main room are divided by a low bookcase fitting. The north
HOUSE DESIGNED FOR MR AND MRS HARRIS
ARCHITECT PAUL PASCOE
SCALE SIXTEEN FEET TO ONE INCH

SIMILAR HOUSE IN BRICK VENEER
BEING BUILT IN DUNEDIN
ARCHITECT PAUL PASCOE
wall of this room has very low windows running almost its full length, with casement doors opening on to the terrace in the centre of the dining room. There is a canopy over the entrance and a cantilevered wooden frame for an awning over the windows on the north.

Though a small house, it is an excellent application of the ideas of such architects as Wright and Le Corbusier, suited to the materials and climate of the country.

"EMFIELD," METHVEN:

Built in 1941. After the outbreak of war, prices rose so high that it was necessary for architects who wished their schemes to materialise, to consider means of reducing prices without reducing the quality of their buildings.

In this house, Paul Pascoe the architect, made two interesting and successful experiments (they could only be called experiments in this country). All windows were combinations of a unit sash and the roof was of single slope - so suitable for a district which has heavy snowfalls during the winter.

There is one large room for living and dining with a fireplace at either end allowing both sections to be used separately - these being divided by a heavy curtain. It is lit by a large window (divided into panes of about two feet square) facing the mountains. The single slope roof allows a greater ceiling height in this room - 9' 6" with other rooms 8' 6".
The walls are of brick veneer construction; 4" x 2" studded walls are first built off the concrete foundations; the external brick sheathing wall is then built 1½" from the face of the studs to which it is tied at every fourth course with wire ties. All the walls and ceilings are of lath and plaster, the sashes are of wood and the roof of corrugated iron.

On the north the roof which projects 2' 6" from the face of the wall, has a wooden lining to the underside and is supported on projecting rafters.

**HOUSE, FORD STREET, OPAPA:**

Built 1940. It is most probable that New Zealand architectural design will be considerably influenced by the work of refugee architects, thus this example, by an Austrian, is of particular interest.

The framing is of timber, plastered internally and lined externally with rough sawn rusticated weatherboarding (similar to that in general use at the beginning of this century but with a narrower joint showing on the face). The roof is lined with mahold. The foundations are concrete with porch floors, paths and retaining wall to the street boundary of Halswell stone.

The living room and passage (which can also be used as a sun room) have glazed folding doors opening on to a terrace and garden. The bedroom windows are of the "whitney" type.

The walls, flush panel doors and narrow architraves and skirtings are painted cream. The main ceiling lights are recessed into the roof and have glass covers flush with the plaster face.
The walls are of brick veneer construction: 4" x 2" studded walls are first built off the concrete foundations; the external brick sheathing wall is then built 1½" from the face of the studs to which it is tied at every fourth course with wire ties. All the walls and ceilings are of lath and plaster, the sashes are of wood and the roof of corrugated iron.

On the north the roof which projects 2' 6" from the face of the wall, has a wooden lining to the underside and is supported on projecting rafters.

HOUSE, FORD STREET, OPAWA:

Built 1940. It is most probable that New Zealand architectural design will be considerably influenced by the work of refugee architects, thus this example, by an Austrian, is of particular interest.

The framing is of timber, plastered internally and lined externally with rough sawn rusticated weatherboarding similar to that in general use at the beginning of this century but with a narrower joint showing on the face). The roof is lined with malthoid. The foundations are concrete with porch floors, paths and retaining wall to the street boundary of Halswell stone.

The living room and passage (which can also be used as a sun room) have glazed folding doors opening on to a terrace and garden. The bedroom windows are of the "whitney" type.

The walls, flush panel doors and narrow architraves and skirtings are painted cream. The main ceiling lights are recessed into the roof and have glass covers flush with the plaster face.
INTERIOR

VIEW FROM NORTH-WEST.

GROUND FLOOR PLAN

HOUSE FORD STREET, OPAWA
CHRISTCHURCH.

SCALE SIXTEEN FEET TO ONE INCH
The living room fireplace has a cream cement surround finished against the firebrick lining with a chromium angle. The ash pit has an external door for cleaning purposes. The hearth is of black tiles.

The furniture designed by the architects is of Rimu, with a surface finish of transparent-polish. Some of the doors, table tops and drawer fronts are of walnut three ply. The weatherboards are oiled and the sashes and frames painted white.

I find this house very interesting and consider it a successful adaptation of architecture to colonial needs.
GOVERNMENT HOUSING

THREE BEDROOM DETACHED TYPE.
BRICK AND TIMBER CONSTRUCTION.

FOUR BEDROOM DETACHED TYPE.
NOTE DESIGN OF STANDARD BRICK HOUSE.

DETACHED WOODEN HOUSES.
PLASTER FINISH EXTERNALLY.

THREE BEDROOM TWO UNIT TYPE.
WEATHERBOARDED EXTERNALLY.
GOVERNMENT HOUSING:

"For nearly half a century the State has concerned itself with the housing of its people. In 1894 a Government Advances to Settlers Act was passed, enabling the State to lend citizens sums ranging from £25 to £2,500 to erect buildings on freehold or on Crown leasehold land which was not urban or suburban.

The advance was not to exceed three-fifths of the value of the security. In 1899 urban and suburban lands were relieved from their disability.

In 1905 a further step was taken when the State itself was authorised to build houses at the cost of £300 per house. Persons earning not more than £156 per annum could purchase, rent or lease these houses.

The inadequate sum of £300 had to be increased by later Acts. This scheme did not prove very popular (only 657 houses were built under these Acts in the period 1905 to 1919), as workers preferred to take advantage of the provisions of the Government advances to Workers Act of 1906 which permitted those earning not more than £200 per annum to borrow up to £350 to build houses for their families provided that the advance did not exceed three-quarters of the value of the security.

The house problem became acute immediately after the Great War and in 1919 a more comprehensive housing act was passed, enabling the State to build a better class of house to be made available for those earning £300 per annum with an additional allowance
for dependents.

Some 900 houses were erected under this act. At the time local bodies were empowered to use State Advances for the construction of workers' dwellings, and from 1923 onwards advances to individual owners became more liberal.

From this year until 1951 loans were granted up to 95% of the cost or valuation of properties."

Paul Pascoe's, "Houses" Volume of the "Pictorial Surveys of a Century."

When the Labour Government came into power in 1935 preparations were made for an extensive scheme for building State Houses. In that same year a Housing Survey Act was passed which required that each local authority should undertake the work of inspecting the houses in its own district.

This provided accurate information on numbers and disposition of dwellings, the type of construction, the condition of structure and services and the number of persons accommodated. The conditions revealed in Christchurch were described in the case of large families with small incomes as "terrible" while conditions in Wellington must have been much worse for they had almost twice as many overcrowded houses.

It was found that to eliminate overcrowding nearly 15,000 persons would have to be found new homes and to eliminate the low standard accommodation 68,500 persons, these figures applying only to towns
of over 1,000 inhabitants.

In 1935 a Department of Housing Constructing was added to the State Advances Corporation. Its duties being the purchasing of land, the designing of houses and the supervision of their construction including the letting of contracts - the houses to be built by private enterprise.

Christchurch had already seen an unsuccessful Government Housing Scheme built in 1918 at Northcote, Papanui. It had unfortunately been constructed in an isolated position on damp ground - it has been since thoroughly drained and with the spreading of the town to make it appear less isolated has proved more successful. The houses of the detached and semi-detached types are built of brick with pebble-dash finish.

The first contract for this new housing scheme was not let until 1936, although in the meantime a great amount of money was lent by the State Advances Corporation for private domestic building. Architects in private practice were given the work of approving drawings and specifications and supervising the erection of these houses.

Naturally, the increasing amount of Government Housing has decreased the amount of Government money loaned for private building, though the Corporation still advances money for such purposes and issues to those who desire it, a book of approved plans.
GOVERNMENT HOUSING

PLAN OF TYPICAL TWO BEDROOM HOUSE
SCALE: SIXTEEN FEET TO ONE INCH

TYPICAL PLAN OF LARGER TYPE OF STATE HOUSE
DRAWING COPIED FROM PAUL PASSO'S "HOUSES"
NO SCALE
PLAN OF TWO UNIT HOUSE
EACH WITH ONE BEDROOM
BRICK VENNER CONSTRUCTION
SCALE SIXTEEN FEET TO ONE INCH

PLAN OF FOUR UNIT HOUSE SHOWING
MINIMUM ACCOMMODATION
FOR STATE HOUSING
DRAWING COPIED FROM PAUL PASCOE'S HOUSES - NO SCALE
By the end of 1940 over £14,000,000 had been spent on State Houses and during that same period £16,000,000 had been loaned by the State Advances Department to 16,000 people for building homes, this including £7,000,000 to farmers (who would not be affected by the Housing Scheme).

Some schemes comprise a few houses on existing roads while larger ones are built on undeveloped land, new roads and practically new suburbs being formed. Approximately 300 type plans were prepared by the Department, different types being used in one Scheme, for as the Minister of Housing proudly boasted no two houses in any Scheme would be the same.

The houses are built of timber, brick and concrete often with tiled roofs - the percentage of brick houses being greater than in private work. They are quite well planned, well finished, fitted with modern utilities and built of the best materials.

The two house units contain a living room, one or two bedrooms, a bathroom, a kitchen and a laundry. The three and four house units usually have a common laundry and less bedroom space. Detached houses have a dining room and from two to four bedrooms. The rents range from 12/6 weekly in a four house unit to £1.12. 6 in a detached house with six rooms. The letting and administration of these houses is the work of the State Advances Corporation.

The houses forming the nucleus of these schemes are of bungalow type built in brick and timber and similar in design, (though not exactly the same).
Houses of modern design are built in special places—these unfortunately for the general effect of the scheme are better than the standard ones.

This is accentuated by the fact that the blocks containing the larger number of unit houses which create a better impression in the street are usually of modern design.

The thoroughness with which the various designs, good in themselves perhaps, are jumbled up to give rugged individuality as a concession to the backwardness of the public mind has greatly reduced the value of these schemes as experiments in town planning.

The design of the houses which is a great improvement on that of the average Christchurch house, and the absence of fences on the street frontage (the sections are divided by low kerbs) giving the appearance of continuous lawns and gardens makes these streets a decided improvement on the usual suburban street.

Christchurch has a number of these schemes the largest being at Riccarton while most towns in Canterbury, some quite small in population, have their Government houses. As yet no flats have been built in Christchurch by the Housing Corporation though those built in Wellington and Auckland have proved highly successful.
VIEW FROM SYDENHAM PARK

VIEW OF COTTAGES FROM NORTH

GROUND FLOOR PLAN

CHRISTCHURCH CITY COUNCIL'S
OLD AGE PENSIONERS' HOMES
BARNETT AVENUE, SYDENHAM PARK

SCALE: SIXTEEN FEET TO ONE INCH
CHRISTCHURCH CITY COUNCIL'S
OLD AGE PENSIONERS' HOMES
BARNETT AVENUE, SYDENHAM PARK
SCALE: SIXTEEN FEET TO ONE INCH
The Labour Council decided in 1939 to consider a scheme for providing homes for aged persons, at a rental which would be within the means of those receiving State Age benefits.

Two schemes were planned both to be erected on excellent sites with a northerly aspect and overlooking council reserves. The units forming the blocks for these schemes were to be of two similar types, the variation being in the size of the bed recess.

The scheme was approved and fifty two units were built, twenty six at Barnett Avenue (Sydenham Park), and twenty six at Williard Street (Simeon Street Reserve). The former scheme comprises sixteen larger and ten smaller units and the latter twenty larger and six smaller.

The approximate cost per unit was £460, making it possible to let them at a monthly rental of £2. 3. 4, for the smaller and £2.12. 0, for the larger ones.

CONSTRUCTION:

The cottages are built of wood with concrete division walls between the units. External walls are weatherboarded and roofs are of either concrete tiles or of corrugated iron. Rooms are well provided with cupboards, fuel being kept in an enclosed porch.

Cooking is done by means of an "Interoven" fire imported from England, which comprises an open fire and cooker with a small oven above the fire.
This provides for all cooking, and adequate hot water service and heating to both living room and bed recess. Small wash boilers are provided in each kitchen, these with the provision of a large sink make washing quite simple for old people.

In planning, it was most important to remember that maximum convenience and minimum space were necessary to reduce work (for tenants are all old) as much as possible.

With such low rentals the demand for these cottages is particularly keen and the Council has decided to raise a loan of £25,000 for the purpose of building further schemes.
TENEMENTS, DURHAM STREET
CHRISTCHURCH

VIEW FROM STREET

IRRATIONALISM OF FASHION
EARLY TWENTIETH CENTURY

HOUSE ROSSALL ST, CHRISTCHURCH

GOVERNMENT HOUSING
IMPROVEMENT IN STREET APPEARANCE

SCHEME IN FERRY ROAD, CHRISTCHURCH
TENEMENTS, DURHAM STREET
CHRISTCHURCH

VIEW FROM STREET

IRRATIONALISM OF FASHION
EARLY TWENTIETH CENTURY

HOUSE ROSSALL ST. CHRISTCHURCH

GOVERNMENT HOUSING
IMPROVEMENT IN STREET APPEARANCE

SCHEME IN FERRY ROAD CHRISTCHURCH
CONCLUSION:

New Zealand recently celebrated the Centenary of British Rule. During those hundred years her domestic architecture has appeared in an amazing variety of styles, influenced in the first years by work done in England at that or earlier periods. The first colonisation of this country coincided with the collapse of the architectural good taste of the Regency Period in England.

This influence has, generally speaking, been good but we have in Durham Street, Christchurch, an example which shows the stupidity of repeating, without due regard to new conditions, the architecture of the old world. The earlier portion was built in 1876. It now stands, an ugly block of tenements crowded together in a street of detached houses set in their own gardens.

Today the ideas of architects in all parts of the world influence the work done but as New Zealand has now produced her own architects they must be responsible for her building.

The Government has of recent years played an important part in domestic architectural design and will no doubt continue to do so. Before success can be achieved in these schemes, it must be realised that petty individuality makes impossible the standardisation of parts with its accompanying economy. When this is appreciated it will be possible for the Government Architects to consider, not only the design of each house but that of each street and so the whole scheme. We will then have cities - unlike many, New Zealand
cities are quite well planned - which are worthy of a progressive country. In these schemes too, the great variety of finishes and colours has interested a public whose conservatism had previously made such experiments very difficult.

Modern architecture tends to become international but designs must be influenced by building materials available and by climatic conditions. New Zealand may not always have vast timber resources and should consider earthquake-resisting construction. This suggests that reinforced concrete will become more important in building.

At all times however, we must make the best use of the most suitable materials and not be guided by a fashion of the time. Because this idea was ignored by architects at the beginning of the century, our cities are dotted with freak creations like the house (here illustrated) in Rossall Street, Fendalton.

Planning expresses living, thus if we learn to live simply and adequately our homes will be practical and beautiful. New Zealand has made valuable contributions in other spheres of human interest and it is possible that her architecture without being as distinctive as that of the Maoris, will in future add something of worth to the art of the world.
Lord Bledisloe has said,

"New Zealand is the gem of the British Empire and the South Island its most beautiful part."

If this is to include her architecture we in Canterbury have much to do.
"ITS MOST BEAUTIFUL PART"

FROM THE MILFORD TRACK.

MOUNT TUTOKO.
BIBLIOGRAPHY:


NOTE:

ALL PHOTOGRAPHS HAVE BEEN TAKEN BY THE AUTHOR UNLESS OTHERWISE STATED.