The "Taranaki Type": CH Moore and the "revolutionary" fresh-air classroom design

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ABSTRACT: Charles Howard Moore was the Taranaki Education Board Architect from 1920-43. During his tenure Moore developed an open-air classroom design that he called the "Taranaki type"; a design that he claimed was an improvement on the "Fendalton type" of Christchurch. The first Taranaki "fresh air classroom" was opened in New Plymouth in 1928. The "Taranaki type" embraced the principles of natural light and fresh air in an innovative and thoughtful way that took into consideration climatic conditions and the needs of the users. Moore's distinctive design dominated classroom construction throughout the Taranaki region and many of them continue to be used for educational purposes.

The New Zealand Historic Places Trust has registered examples of the Taranaki fresh-air classroom and many have been identified by local councils for their architectural and technological values. However, little has been written about CH Moore - his life, training, experiences, and influences. Was he a lone practitioner of the open-air design? Was his design "revolutionary"? Were his classrooms successful? Utilising a variety of archival sources, genealogical research, and comparative analysis, this paper will reveal a more detailed picture of CH Moore and examine his contribution to the design of educational buildings in New Zealand.

> We have taken the child out of its natural habitat of open air, freedom and sunshine, and for nearly half his waking hours we are subjecting him to an unnatural regime, one which disturbs all the vital functions.[1]

The Taranaki Type classroom design evolved in response to the political and social movement of Open-Air Schools that became prominent in the early part of the twentieth-century when the issues of health and wellbeing, especially the wellbeing of children, came to the fore. The education authorities and the Education Board architects responded to the movement with original and unique designs that created interest and attracted criticism. The Fendalton open-air classroom was opened in Christchurch in 1924 and the first fresh-air classroom was erected in New Plymouth in 1927. The fresh air design was conceived by the Taranaki Education Board Architect, Charles Howard Moore, and it dominated the construction of primary school buildings in the Taranaki district into the 1940s.

The practices of exposure to fresh air and sunlight as a therapy in the treatment of tuberculosis had been recognised for some time. Congested cities and greater understanding of disease saw the design and construction of institutions and sanatoriums that promoted the ideas of air and light. Large windows, verandahs, open-plan design, and gardens were features of many health-related buildings and institutions. The open-air school movement was an adaption of established sanatorium treatments.[2] Initially established for the rehabilitation of physically unhealthy children from the cities, international attention was drawn to the success of an Open-Air School established in the forests of Charlottenburgh, Germany, in 1904.[3]

Newspapers in New Zealand reported on the German experiment and on other school districts of the USA, Canada, England and Europe who had initiated their own experiments. Commentators from the medical fraternity, school inspectors and educationalists advocated for the establishment of open-air schools in New

[1] Terman quoted, Open-Air Schools' League of New Zealand *Open Air Schools* (1933) p 3.

[2] Pond & Tite "A good start in life" p 18.

[3] Chatelet "Open Air School Movement" n.p.

Zealand that would benefit the health and learning of all children. A Dr Bowie of Dunedin Hospital commented that the practice would also be of value to teachers: "instead of wanting a cup of tea to freshen her up, [she] would be ready and eager for a game of tennis."[4] Pressure was put on the Education Department to create a "policy in accordance with the plain lessons of experience and common sense."[5]

The Education Department was aware of the successes that had been claimed in overseas experiments and had initiated its own with the construction of an open-air classroom at South Wellington School. In 1916 the Director of Education circulated a memorandum to the Secretaries of the Education Boards explaining that the Department had undertaken an experiment at the school and "careful records have been kept of the comparative results in the physical and mental development of children taught in an open-air building as contrasted with that of the children taught in the ordinary school building."[6] The memo indicated to Education Boards the wish of the Department to find

> the best mode of adapting the open-air type of building to New Zealand conditions ... Education Boards might take into consideration the best means of establishing open-air schools suitable to the climatic conditions prevailing in the several districts and submit proposals to the Department.[7]

The Taranaki Education Board Architect Charles Howard Moore took up the challenge to design schools that could be described as open-air. His buildings, dating from the early 1920s, were of a standard shape that incorporated sets of large paned glass windows that could be flipped open. One end of the school building had large doors that could be opened up to expose the children directly to sunlight and fresh air.

In 1920 representatives of the Education Boards of New Zealand met in Wellington to discuss various issues regarding their regions; mostly the conversations were around funding and the shortages that were being experienced since the end of World War I. Two days were set aside for discussions between the Education Board Architects. It was reported that the chairman, G Penlington, architect to the Canterbury Education Board, had suggested the architects convene. His idea being that the architects in different regions would be able to approach each other for information and assistance. Climatic differences between the regions meant that there were different approaches to open-air schools, and the heating and ventilation of schools.[8] The *Fielding Star* reported that CH Moore gave a paper on "Open Air Schools," and the architects visited some of the most up-to-date schools in Wellington.[9] CH Moore's paper has not been located but we can guess that the paper outlined his thoughts of the application of open air school design in Taranaki.

A further conference on school buildings was held in January 1921. Chaired by the Minister of Education, Hon CJ Parr, those in attendance included in the Education Board architects, representatives of the Education Boards, the

[4] "Value of Fresh Air" p 5.

[5] "Open-Air Schools" (1910) p 4.

[6] Circular Memorandum, Director of Education to Secretaries of Education Boards, 25 August 1916. The open-air classroom was built at South Wellington School, it is unknown if this building still exists.

[7] Circular Memorandum, 25 August 1916, ABDU W3570 Box 234 Record 3/23, Taranaki Education Board, Archives NZ, Wellington. The details of this memorandum were also reported in "Open Air Schools" (1916):4.

[8] "Architects' Conference" p 2.

[9] "Architects' Conference" p 2.

Education Department Architect John Mair, the Government Architect John Campbell, the Railway Architect George Troup and Dr Truby King.[10] While much of the discussion was about improving the economy and efficiency in the construction of school buildings, an interesting presentation by Dr Truby King was made. He advocated for designs that allowed for the adequate flow of fresh air, adequate and even light for each child, and the means of varying the same in different climatic conditions. He advanced the idea for large room sizes and demonstrated a window of his own invention.[11]

The issue of costs and the more-costly designs of the open-air classroom continued to be discussed at the next conference in 1923. There was no desire to go back to the old designs that did not adequately take into account the need for light, ventilation and heating, however the ideas of standardising a design were argued. A letter to the editor of the *Evening Post* was printed after the conference that asked for a correction to the impression that a "conference of architects" had arrived at decisions regarding the policy of the erection of school buildings. The author pointed out that the decisions were made by "representatives of education boards and a few Departmental and education board architects ... Neither architects in private practice carrying out school buildings nor the council of this institute [N.Z.I.A] were consulted, represented, or invited to attend."[12]

Debates on the benefits of open-air designs and the implementation of one standard design would continue. However, the autonomy of the Education Boards and their architects meant that the design of different "types" of school buildings continued to be produced in response to the economic and environmental conditions of the different districts. In the 1920s there were still shortages of materials and difficulties in obtaining tenders that would not exceed the grants allocated by the Education Department. This provision created an element of central control over what buildings would be funded as well as the approval of the Department Architect and officials.

Open-Air Schools' League – "Every school an open-air school"

Political and social pressure on the Education Boards and Education Department to construct open-air schools for the benefits to health and learning was strongly felt in the Canterbury District. In 1924 the Open-Air Schools' Council, led by Professor James Shelly (1884-1961), Professor of Education at Canterbury College, consisted of a number of influential men in the community.[13] The Council merged with the Open-Air Schools' League, which had formed in 1925, and created the motto: "Every school an open-air school."[14] The health of children was becoming an important political issue and open air classrooms were another step in "breeding super-fine children" and freeing "the school child from the tyranny of the closed school."[15]

The first prototype of the open-air classroom was opened at Fendalton School, Christchurch, on 26 July 1924. The classroom cost £411/10/- and the money was raised by

[10] Minutes, Conference Re: School Buildings, January 1921, First Session.

[11] Minutes, Conference Re: School Buildings, January 1921.

[12] "School Architecture" p 10.

[13] Carter "Shelley, James - Biography" n.p.

[14] Open-Air Schools' League of New Zealand *Open Air Schools* p 9.

[15] Open-Air Schools' League of New Zealand *Open Air Schools* p 8.

the school committee through subscriptions from the community and £200 from the Christchurch Rotary Club.[16] The design of the classroom has been attributed to Dr RB Phillips, Canterbury Schools' Medical Officer, in conjunction with AR Bland, Fendalton's headmaster, and the plans were drawn up by the Christchurch architects Ellis and Hall.[17]

A lecture by Dr Phillips given to the Canterbury Branch of the New Zealand Trained Nurses' Association in 1925 outlined the history and principles of the open-air schools' movement and the success of the Fendalton experiment. Dr Phillips promoted the "bungalow" principle so that each classroom was a separate structure and all four walls could have openings.[18] Dr Phillips also made the comment that

> a class of people who know nothing of ventilation are architects ... there are few architects who understand ventilation or who try to understand it. The best ventilated house in the Dominion was built to the design, not of an architect but by a doctor.[19]

Dr Phillips was referring to Sir Truby King's house in Wellington, which was designed by the pre-eminent architect William Gray Young (1885-1962); the location of the house of a hilltop was probably part of the reason for it being so well ventilated.

Professor Shelly, in an address to householders in the Leeston area, spoke on behalf of the Open-Air Schools' League in promoting the benefits of the Fendalton classroom as an ideal type of open-air classroom. He described the design as a free-standing box structure, with a hipped roofline. The classroom has three sides that are glazed with sash windows and one that is entirely open with sliding doors that can be closed if the weather necessitated. "It is a mistaken idea to build the windows of a school so high that the pupil cannot see out of them, after the manner of a prison."[20] A fireplace provided the heating but was seldom used. Narrow windows are at the top of the walls so through ventilation could operate regardless of what direction the wind was blowing. The building was orientated so that the front faced the sun and was not struck by the prevalent winds. The design provided for maximum sunlight and ventilation.[21]

Debates on which type of open-air classroom the householders of Leeston should choose highlighted the difference between the Fendalton Type and the Temuka Type, which had been designed by the Canterbury Education Board. The *Ellesmere Guardian* published pictures of both "types," the principal difference being that Fendalton had a full opening of one side – with folding or sliding doors exposing the children to the sun and fresh air and Temuka had windows and a door. Members of the Open-Air Schools' League promoting Fendalton as staying true to the principles of sunlight and ventilation, and lambasting the Temuka Type as a

[16] Open-Air Schools' League of New Zealand *Open Air Schools* p 10.

[17] "Fendalton Open-Air School." Three more classrooms were built and the school was renamed the Fendalton Open-air School in 1963. Two of the four classrooms are still extant and continue to be used.

[18] Phillips "Fresh Air-Sunlight-Open Air Schools" p 109.

[19] Phillips "Fresh Air-Sunlight-Open Air Schools" p.109. The Truby King House is registered Category I with the New Zealand Historic Places Trust, record no. 4427.

[20] "Open-Air Schools, Modern Type of Building" p 6.

[21] The Open-Air Schools' League published a pamphlet that promoted their ideas and used the Fendalton classrooms as a model. Open-Air Schools' League, *The New Zealand open-air school*. The Open-Air Schools' League of New Zealand published a more substantial pamphlet in 1933 that was a manifesto for the establishment and remodelling of all schools as open-air schools. Open-Air Schools' League of New Zealand, *Open Air Schools*.

retrograde step.[22]

The Taranaki Type

As robust debates around the design of open-air classrooms continued in Canterbury, CH Moore, architect to the Taranaki Education Board, had considered the Fendalton Type and had developed the Taranaki Type in response. Moore commented in 1926 that he "had had this idea under consideration for some time and it has interested him very much to follow closely the views expressed by open air enthusiasts during recent years."[23] The first fresh-air classroom was erected on the Courtenay Street Central Infants site in New Plymouth in 1927. The grant application for its construction had initially been rejected by the Education Department due to the cost and their determination that the Fendalton Type was the preferred design.[24] However, the Taranaki Education Board felt that climatic conditions in the region did not lend itself to an open-air type and their architect, CH Moore, had studied these problems and had improved on the design to create a fresh-air classroom.[25] By March 1927 the Department relented and made the grant for the experimental fresh-air design. On the 20 September 1927 *The Taranaki Daily News* reported that the first open-air school-room to be erected in the North Island, and the only one of its particular design in New Zealand, was officially opened by the Minister of Education, Hon RA Wright on 19 September 1927.[26]

There was a need to defend the fresh-air type and differentiate it from the other "types" which were under scrutiny, and the claims made by the promoters of their success were being exaggerated. A personal letter was sent to TU Wells, a prominent educationalist, from the Secretary of the Taranaki Education Board, inviting him and his colleagues to visit the Taranaki open-air type of school:

> Mr Moore, the Board's Architect, saw the Fendalton School at Christchurch two years ago and pointed out the draw backs you mentioned at the Council of Education [lack of exposure to sunlight and draughts]. He has since constructed two buildings which I really believe will be the type adopted in the future when prejudice has been broken down (and jealousy set aside).[27]

The Secretary had also written to the Chairman of the Auckland Education Board extending an invitation to visit Taranaki and investigate the Taranaki open-air schools "my Board feels that before any judgement is passed upon open air buildings, all types at present in being should be carefully inspected and their merits or claims thoroughly investigated."[28] CH Moore's fresh-air design overcame the deficiencies that made the Fendalton Type inappropriate for climatic conditions of Taranaki.

In the Architect's Report to the Chairman of the Taranaki Education Board, CH Moore outlined his thoughts on the design for the Hawera New Infants classroom block that had been constructed in 1928. He called the school a special type of free-air and sunlight, commenting that the lighting and system of ventilation were free from the defects attributed to open air schools.[29] He went on to

[22] "New Leeston School. Fendalton Type Advocated" p. 6. The Temuka Type was chosen by the school committee and three open-air classrooms were opened on 17 December 1928. As reported in the "New Classrooms Opened, Leeston Public School" p 5.

[23] "Open-Air Schools" (1926) p 6.

[24] Memorandum Director of Education to the Secretary of the Taranaki Education Board, "Central School-Infants' – Mr. Moore's Plan" 19 November 1926.

[25] "Open-Air Schools. Plan for Courtenay Street."

[26] "New Style of Open Air School" p 10.

[27] Secretary Taranaki Education Board to T.U. Wells, Personal communication, letter, 14 June 1928.

[28] Secretary Taranaki Education Board to Chairman Auckland Education Board, Letter, 14 June 1928.

[29] Moore, Architect's Report to the Chairman of the

express his opinion about recent criticisms:

To anyone with practical experience the lack of knowledge shown by the recently expressed opinions on open air types of schools by educational authorities must appear rather appalling. The cause of this misconception is partly owing to a wrong type of building taken as a standard. After all open air and sunlight cannot alone be considered. A room that is more or less neglected in regard to teaching facilities must be a failure. Surely it must be recognised that there are many features to take into consideration in designing a classroom besides open air and sunlight and it seems common sense to combine all the features to make a satisfactory room from all points of view.[30]

In 1929 CH Moore wrote a report on the general description of the Taranaki Type and the advantages claimed of such a design. Titled "Controlled South Lighting and Fresh Air Type of Classroom," CH Moore laid out the original elements of his ideas as well as those borrowed and improved on.[31]

All the children in the room should have equal conditions of sunlight and fresh air and the unnatural closed-in feeling obviated as much as possible. Also the supply of fresh air should be under complete control according to climatic condition. These features are embodied in what is now known as the Taranaki type of classrooms ... the system of drop sashes, general construction and lay out of the building, the installation of vita glass (the first to be used in schools in New Zealand) are original ideas. The lighting from the south is not original because it has been tried out in Derbyshire, naturally of course it would be north lighting there.[32]

The Taranaki Type is distinctive in its shape, in particular the 'mansard' pitched roofline with a 60-degree angle on the south and north sides. The classroom size was approximately 24 feet by 21 feet with a feeling of spaciousness extended by an exposed roof.

Moore improved air circulation through the use of drop sashes on both sides of the classroom. The sashes are hung on weights and slide down into the hollow of the walls below a height of four feet from the floor. Depending on the weather conditions the windows could be raised or lowered to facilitate a current of fresh air flowing above the heads of the children. Two doors on each side of the room provided for alternate entries and exits with one being kept closed during bad weather. Narrow verandahs were erected on all sides of the building to provide sheltered areas for the children and to shelter the drop sashes. The verandahs were hung from the roof, eliminating the need for posts which children could run into, and seats were placed against the walls.

The main lighting was provided by a continuous line of fixed sashes in the 60-degree roof angle on the southern side of the building. Some of the buildings had the pattern repeated on the north side; others had the insertion of dormer windows to give light coverage to each room. The roof lighting combined with the side windows and the use of vita glass gave the room an equality of conditions and the children a bright and well-ventilated environment. The sashes could be on all three sides of the walls adding to the cheerfulness of the room and to the general appearance of the building. The use of vita glass was to allow ultra violet rays to pass through, as it was understood at the time that these rays were health rays that were necessary to everyone.

Hot water heating systems were installed for each classroom, though CH Moore was not in favour of artificial heating, with the concern

Taranaki Education Board, 16 June 1928, Taranaki Education Board Minute Book.

[30] Hawera New Infants – Special Type of Free Air and Sunlight, Architects Report.

[31] Moore, South Lighting and Fresh Air Type of Classroom, Report to the Taranaki Education Board, 12 September 1929.

[32] Moore, South Lighting and Fresh Air Type of Classroom p 2.

that overheating would undo the good effects of a well-ventilated room and rather children should wear appropriate clothing.

The principles of the Taranaki Type as outlined by CH Moore were able to be applied to single rooms such as a Courtenay Street Infants School classroom, as well as a series of rooms like the Hawera Infants block which consisted of five rooms. CH Moore ends his report with a quote from the Annual Report of the Inspectors of Schools in the Taranaki District, which commented that both teachers and school committees were favourable of the open-air design. His closing remark is one of humility and devotion of purpose: "whilst I have no personal gain in view it gives me pleasure to feel that, if the children who occupy the schools built on this plan are made more healthy, the time spent in thought and labour has been well worth while."[33]

A report on Open-Air Schools throughout New Zealand was submitted to the Health Department in 1931. C.H. Moore commented on the report to the Taranaki Education Board, arguing that there was a lack of awareness by school inspectors and health authorities between open-air and fresh-air school designs. "It is astonishing the small amount of practical interest that is shown in school buildings by educational authorities." The Taranaki Type was "a more easily controlled fresh air school ... and can be turned into practically an open room in a few minutes."[34]

The majority of fresh-air classrooms were built in the cost-effective material of timber, which also allowed for ease of alteration and additions. An exception was the permanent example of the fresh-air design that was built at Central School, New Plymouth. Built of brick and timber, construction was already underway when the disastrous Hawke's Bay earthquake struck in 1931. In the wake of the disaster the Department of Education stopped works until the Taranaki Education Board and its architect convinced the Department and families that the Central School design would be earthquake proof. The school was eventually completed and officially opened on 17 February 1932.

The Auckland Education Board Architect, AB Miller, had visited Taranaki in 1929 to inspect the latest types of fresh-air classrooms. It was reported that Miller had evolved his own type that incorporated the most desirable features of existing types of open-air school and eliminated those that had proved to be undesirable.[35] The Education Department had already been implementing an open-air classroom design for Māori Schools, which at that time was under the direct control of the Education Department, not the District Boards. The open-air classroom design was developed by the office of the Government Architect has been described as the "pavilion" style. The main features being a north facing elevation with large glazed doors that folded back in concertina fashion, a large flat roofed verandah with clerestorey windows above and double hung windows on the south side. This style came to dominate open air classrooms until the mid-1940s when deficiencies in its design, unsuitability in colder areas and cost saw it loose favour.[36]

[33] Moore, South Lighting and Fresh Air Type of Classroom, Report to the Taranaki Education Board, 12 September 1929 p 5.

[34] Moore, Architect's Supplementary Report to the Taranaki Education Board, Report on Open Air Schools Throughout New Zealand, 16 June 1931.

[35] "Open-Air Schools. New Plan Evolved" p 4.

[36] Kellaway *Education 150* p 106.

Charles Howard Moore – builder, joiner, architect (1871-1961)

Charles Howard Moore was born in Nelson on 22 April 1871. His father, Charles Walter Moore, was an early settler and respected builder in Nelson. CW Moore was responsible for the construction of a number of high-profile buildings in Nelson, including the Theatre Royal (1878).[37] He is also credited with building St Mary's Convent and the first wooden buildings of Nelson College.[38] Described in some reports as an "ecclesiastical architect and builder," CW Moore died in 1923 aged 98 years.[39]

Little is known about CH Moore's education but it can be inferred that he went to school in Nelson and may have been apprenticed as a builder or joiner in his father's business. Moore moved to New Plymouth and married Lily Hughes Duffin in 1896.[40] *Stones Wellington, Hawke's Bay and Taranaki Directory* records Charles Howard Moore, joiner, residing in Blagdon, a suburb of New Plymouth, between 1903 and 1905.[41] From 1920 he is recorded as living at 80 Lemon Street and the certificate of title for the property records his occupation as joiner.[42] Lemon Street was also the location of the Taranaki Education Board Offices.[43]

The history of the Taranaki Education Board states the CH Moore was appointed overseer to the Taranaki Education Board in 1909 and architect from 1920 to his retirement in 1943.[44] He served the Board for 34 years and during that time Moore:

> effected improvements in the design of schools, both internally and externally, that reflected credit on his architectural ability ... His work reflected his own solid qualities of character. Somewhat reserved, dour, and thoughtful by nature, he could be brusque in his manner when he though the occasion required it, but he was held in high regard not only by the Board but also by all members of the staff.[45]

CH Moore was not just responsible for the design and construction of school buildings; he also designed teacher's residences, "portable" school buildings, memorials, school furniture, and was instrumental in the establishment of the Education Board Workshops where joinery, fittings and equipment for schools and residences were produced economically.[46] CH Moore died in Nelson in May 1961 aged 90 years.

The literature that exists and the physical evidence of the fresh-air classroom design means that the architectural pattern can still be read. A least 20 of the single classrooms and classroom blocks still exist and most continue to be used for educational purposes. These classrooms are important representative examples of a design that embodied the philosophies being promoted at the time. They were "revolutionary" in their exploration of architectural design and construction methods that applied the principles of ventilation and sunlight, and looked to provide a more natural environment for living and learning in. Experimentation with layout, the utilisation of new materials like vita glass, thoughtfulness to the users and knowledge of the climatic conditions of the region led to a

[37] Theatre Royal, Nelson, NZHPT record no. 3341.
[38] Nelson College for Girls "Theatre Royal Nelson" n.p.
[39] "Obituary" p 11.
[40] "Marriage [Moore-Duffin]" p 2.
[41] *Stones Wellington, Hawke's Bay and Taranaki ... Directory* (1903); *Stones Wellington, Hawke's Bay and Taranaki ... Directory* (1904); *Stones Wellington, Hawke's Bay and Taranaki ... Directory* (1905).
[42] Certificate of Title TN74/107 [80 Lemon Street]. The property was transferred to Moore in 1920 and he transferred the property again in 1960.
[43] Taranaki Education Board Offices (Former), NZHPT record no. 912.
[44] *Taranaki Education Board Beginnings* p 116.
[45] *Taranaki Education Board Beginnings* pp 116-117.
[46] *Taranaki Education Board Beginnings* p 95.

truly unique design. CH Moore's contribution to the architecture of educational buildings and in particular his response to the open-air movement, has been enduring and could be characterised as successful in that its influence continues to be felt throughout Taranaki and beyond.

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