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...Quell'arco corbusiano – è così elegante, così intelligente. Il Palazzo dei Soviet e la Stazione Termini di Roma si incontrano in Scozia

Keywords
Glasgow, Renfrew Airport, William Hardie Kininmonth, airport terminal architecture, parabolic arch

Abstract
In 1931, Le Corbusier took part in the competition for the Palace of the Soviets with the well-known project featuring an assembly hall with beams suspended from a large parabolic concrete arch. While this project was doomed to remain on paper, in 1954 – twenty-two years later – in Renfrew near Glasgow, William Kininmonth (of Scottish firm Rowand Anderson, Kininmonth and Paul) realised a smaller-scale version of the same parabolic arch structure for the airport's new terminal. Other than rendering structural calculations easier, this scale reduction entailed adapting a much grander project to a smaller site and a different brief: architectural form – and its structural expression – detached from a specific function.
Jean-Louis Cohen recognised some of the structural work by Freyssinet – and particularly the hangars in Orly – as one of the possible references adopted by Le Corbusier for the Palace of The Soviet's arch, designed in that case at a much larger scale than the Orly hangars. Kininmonth's design can appear as a sort of reversal of a process: by scaling Le Corbusier's design down again and employing it for an air terminal, it metaphorically closes the circle back to Freyssinet's work. There is, however, another model that comes into play for the Renfrew terminal, again interpreted at a smaller scale: Montuori and Vitellozzi's 1951 building for the Termini station in Rome, particularly the glazed atrium and its curved, projecting beams. The shape of those beams was used for the passenger hall of the terminal and cleverly combined with the Corbuserian arch.
The essay aims to investigate the project by considering it as the elaboration of two different models 'exported' from two different contexts, and reduced in scale in order to be effectively – and safely – combined; how the building was received after construction and whether its models were fully acknowledged, and the building's early demise. It was abandoned in 1966, after slightly more a decade, allegedly due to its lack of flexibility for expansion: perhaps, the clever and well-realised combination had proved both a striking defining feature and an insurmountable limit.

Biography
Chiara Velicogna, architecture historian and architect by training, has obtained her Ph.D. in History of Architecture and Urbanism from Iuav University of Venice with a thesis on James Stirling's Clore Gallery. Her research interests focus mainly on twentieth century architecture, in particular on the British and Italian *milieus* and their exchanges. At Iuav she has worked as a research fellow on the bibliographic fonds of architects Giorgio Wenter Marini and Vittorio Gregotti; she has also worked as research consultant for the Académie de France à Rome and R.F.I (Rete Ferroviaria Italiana). She currently is a teaching assistant at the Politecnico di Milano and a member of the editorial board of the "Engramma" journal.

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...That Corbusian arch – it's so elegant, so intelligent. The Palace of the Soviets and Rome Termini Station cross in Scotland

"Landscape of Hysteria"

Glasgow's Renfrew airport was perhaps already doomed to be dismantled years before the construction of a new, architecturally modern terminal began in 1953. This essay offers an account of a "new lease of life" granted through new buildings, where the prioritisation of aesthetic choices — proportionally reducing models conceived on a much larger scale and adapting them to different political and economic constraints — proved initially effective. Yet it also contributed to an early inadequacy of the new building: the discrepancy in scale between vehicles and infrastructure developed faster and sooner than expected, leading to the eventual decommissioning of Renfrew Airport in 1966, twelve years after the opening of the new terminal.

Understanding the short-lived history of William H. Kininmonth's Renfrew terminal building is equal, in part, to understanding the rapidly transforming civil aviation sector — both at the European and local scale — during the critical years following the end of the Second World War when the foundations of the global civil aviation infrastructure were gradually being established, eventually leading to the so-called "Jet Age" in the early 1960s[1]. The 'land' part of this infrastructure struggled to keep pace with developments in aviation and aircraft engineering, and as Reyner Banham later wrote in 1962, "airports have dragged along behind the aircraft, never up to date, never completed, always inadequate, always sprawling slummily into their surroundings"[2]. Indeed, the speed at which new aeroplanes were designed to accommodate a steadily growing demand for civil air travel could not be matched by the more permanent parts of the infrastructure — runways, handling and maintenance facilities and, crucially, passenger terminals. Banham aptly phrased an intrinsic problem of airport terminal architecture at the time that was also a problem of scale: the inability to provide buildings that could function both for aircraft and passenger traffic or, in other words, buildings that could at the same time be of adequate size for people and for machines, and could stay so for a reasonable time. Looking back on the rapid developments of aeroplane technology that in the span of three decades brought aircraft from wooden vehicles to all-metal jets, he could somewhat bitterly conclude that "the one-building type that belongs unmistakably to airline operation may be doomed even before architects have learned how to design it", identifying the cause of the disconnection between terminal architecture and airline operations in the "unreformed human desire to create places for things to happen in"[3]. It is pro-

[1] Andrew Porter, *Jet Age: How a British invention shaped the modern world* (Amberley, 2015).
[2] Reyner Banham, "The Landscape of Hysteria: 1 The Obsolescent Airport", The Architectural Review 132, n. 788 (1962): 251.
[3] Banham, "The Landscape of Hysteria", 253.

8.1
Renfrew Airport terminal building (Photo: P.D. Mann).

bably in part this kind of desire that spurred the British Ministry of Transport and Civil Aviation to commission a locally prominent architect to build a new terminal in Glasgow designed to be functional *and* architecturally remarkable, on as large a scale as resources allowed. 8.1

At the end of the Second World War, Great Britain stood in an advantageous position in the aviation industry, with many corporations providing and developing military aircraft and, increasingly, civil aircraft based on military transport models. Substantial investments were soon made for the development of exclusively civil aircraft guaranteeing capacity and efficiency, resulting in almost two decades of experimentation that, however, led the British aviation industry, due to costly abandoned programmes and tragic accidents, to lose its prominence by the end of the 1970s[4]. The nationalisation of airfields, together with the establishment of two government-controlled airlines, British European Airlines (BEA) and British Overseas Aviation Company (BOAC), was part of a broader policy of nationalising the civil aviation sector[5]. Adequate infrastructure had to be provided to accommodate an increasing demand for civil air transportation that called for a more substantial reorganisation and expansion of existing airports and for the reconversion of military airfields. This policy had to take into account not only the current state of technology but also its hardly predictable future developments: aircraft size (itself dependent on available technology and market demands) determined both the infrastructure of airports — runway width and length to ensure safety and efficiency — and the scale of passenger facilities. Thus, decisions in civil aviation policy based on inevitably mutable and often wrong predictions had cascading consequences extending to the physical locations of airports and their buildings. Scale had long been recognised as the main factor "for airport location and growth", favouring locations where subsequent expansions could be carried out without the need to relocate the entire airport, and at the same time maintaining the connection with the city at a reasonable distance, cost and convenience[6].

[4] David R. Devereux, "Jets across the Atlantic?: Britain and Its Civil Aviation Industry, 1945–63", *Journal of Transatlantic Studies* 19, n. 1 (2021): 99–113, https://doi.org/10.1057/s42738-020-00065-8. See also David Edgerton, *England and the Aeroplane* (Macmillan, 1992) for a more detailed analysis of the role of military aviation in the development of civil aviation in Great Britain.

[5] Devereux, "Jets across the Atlantic?", 102. See also British Government, Civil Aviation Act (1946). https://www.legislation.gov.uk/ukpga/Geo6/9-10/70/pdfs/ukpga_19460070_en.pdf A short-lived British South American Airlines was incorporated in BOAC at the end of the 1940s.

[6] Christopher J. Blow, *Airport Terminals* (Butterworth-Heinemann, 1991), 8.

A doomed airport?

In the immediate post-war years, Scotland had three main airports, two serving Glasgow (Renfrew and Prestwick), as well as a reconverted military airfield serving Edinburgh. A substantial part of the local debate concerning civil aviation was centred on the role to be assigned to Prestwick, further from the city but closer to the Atlantic coast and in a suitable location for weather and expansions[7], and to Renfrew, located closer to the city and its docks in a way that prevented substantial expansion. Furthermore, unlike Renfrew, Prestwick had been designated an international airport; however, the two were not connected by regular land transport services. This meant that, effectively, passengers traveling from Scotland to other parts of the world were encouraged to transit through London. This was the main issue of contention for those who advocated for a London-independent civil aviation network for Scotland. When the choice was taken — as we will see — in 1950 to invest public funds to develop Renfrew Airport rather than Prestwick, it was perceived as a central-imposed choice, an "abuse of control" hindering the development of Scottish air transport. The political fault in this choice was put into the insistence towards working on infrastructure perceived as already doomed; criticism went as far as hinting at malpractice tolerance in the development of the Glasgow Docks, in close proximity to the airport, in order to allow runway extension[8].

A first discussion of the possibility of building new terminals at Renfrew — itself established as an airport during the First World War — is recorded in 1946, when the Civil Aviation Act took effect and the newly-established British European Airways, handling traffic within the British Isles and to Continental Europe, became the main actor for decisions regarding Renfrew Airport until its closure[9]. In the same year, Sir Patrick Abercrombie and Robert Matthew devised the Clyde Valley Regional Plan, which considered the future of air transport in the area. While recognising the difficulties connected with the "uncertainty in the development of civilian air services", they nonetheless envisaged Prestwick as the international airport and Renfrew as a local one. They stressed that Prestwick, as an international terminal, was to be "conceived on a scale commensurate with an appropriate sense of the importance of one of the world's leading airports"[10].

In early 1949, a conflict was reported between two local development plans, both proposing extensions: at Renfrew, a new runway and terminals, and at the nearby industrial docks, additional shipping basins equipped with high cranes which would lie within the approach path of the airport's existing main runway[11]. The survival of the airport itself was called into question as the scale of two different infrastructures conflicted: a proposed solution, soon abandoned, was to build one large airport at a roughly equal distance between Glasgow and Edinburgh, designed to serve both cities[12]. An infrastructural improvement in Renfrew was recorded in summer 1948 with the resurfacing of the two runways; nonetheless, the passenger terminals were still located — and would remain until 1954 — in huts in a converted WWI-era hangar. The investment envisaged at the time for Renfrew was substantial (around one million pounds) and involved a runway extension, as well as new terminal buildings[14].

The two infrastructural extensions — docks and airport — were needed at that point to accommodate an increase in the scale of Glasgow's commercial operations. While the docks development

[7] During the first half of the 1950s Renfrew regularly suspended operations and diverted traffic to Prestwick mainly due to fog (See the *News* sections of *The Scotsman* for the period 1950-1955).

[8] "Aviation Policy", *The Scotsman*, August 8, 1950.

[9] "Notes from the Industrial Centres. Scotland. Terminal Buildings at Renfrew Airport", *Engineering* 174 (July 1952): 14.

[10] Sir Patrick Abercrombie and Robert Hogg Matthew, *The Clyde Valley Regional Plan 1946: A Report Prepared for the Clyde Valley Regional Planning Committee* (His Majesty's Stationery Office, 1949).

[11] Edinburgh, National Records of Scotland (NRS), DD17/908, Proposals to improve the Renfrew Airport and Extend the King George V Dock; "Future of Renfrew", *Flight International* 55, n. 2090 (1949): 42.

[12] NRS, DD17/908, note from Cunningham to Under-Secretary of State, April 26, 1949.

[13] "Brevities", *Flight International* 54, n. 2069 (1948): 207; "New Terminal Building at Renfrew Airport", *The Builder* 188, n. 5838 (1955): 10–16.

[14] NRS, DD17/908, Minutes of meeting on improvements to the airport and docks, May 31, 1949. The building of a third runway was by that time abandoned most likely due to the docks' high cranes.

was envisaged on a longer time frame, in 1949 the need for an improvement to the airport began to assume some urgency. Nonetheless, a possible closure of the airport within seven to eight years was considered equally likely, which influenced the eventual decision of not building an entirely new airport, opting instead to improve the existing aerodrome buildings to meet the required standards[15]. A first plan for improving the terminal was drawn in late 1949 by architect Joseph Lea Gleave, a member of the Scottish Aerodromes Board[16].

In May 1950, improvements to existing terminals were deemed quite urgent, and Gleave's project was agreed upon in principle. A feature that had been proposed — and later omitted from that project — was that of "a glass verandah [...] included in the improvements to the terminal [...] such an addition would be a great amenity to the airport where the weather was frequently wet and cold. By its command of a good view of flying and other activity in the airport, it would be an attractive place in which passengers and their friends could wait"[17]. While momentarily put aside, the extensive use of glass allowing the public to enjoy the spectacle of airport operations would in the end be one of the main features in the final project for the passenger terminal.

The extension of the terminal building and apron (the part of the airport where aircraft manoeuvre) was approved in principle in summer 1950. The uncertainties on the expected life of the airport remained unresolved and perhaps unresolvable, so that flexibility and capacity for extension were, from that moment on, considered essential features to be included in the design[18]. At the same time, British European Airways finally designated Renfrew as the permanent airport for Glasgow. The estimates underlying this decision were, however, based most likely on assumptions — on the available budget for extension and projected future traffic — which would later prove inaccurate, with the civil aviation industry's scale of development underestimated[19].

"Best airport outside London"

The state of the passenger facilities, recognised as "antedeluvian", at what was rapidly becoming the second busiest airport in Great Britain after London, gave a new urgency to building a new terminal, and thus direct commissioning was favoured over an architectural competition[20]. Following a recommendation from the Royal Incorporation of Architects in Scotland, in December 1950 William Hardie Kininmonth was invited to design the new terminal buildings by the Scottish Aerodrome Board[21]. Kininmonth, born in 1904 and with an apprenticeship in Edwin Lutyens' firm to his name, had formed together with Basil Spence a brief professional partnership and had been one of the first modernist architects in Scotland before the war; at the time of the Renfrew project he was an associate of the Rowand Anderson Kininmonth and Paul firm, of which he would then become Senior Partner[22]. After serving during World War II in Italy and North Africa with the Royal Engineers, in the post-war years he was an established member of Edinburgh's architectural scene, designing university and office buildings, as well as churches, despite employing an "undogmatic, visual approach that seemed superficial to some critics"[23]. He later became President of the Royal Scottish Academy, albeit the later part of his career was dominated by the drawn-out con-

[15] NRS, DD17/908, Extract from minutes of 21st Scottish Aerodrome Board Meeting, June 10, 1949. This meant not only passenger facilities, but also offices and a control tower.

[16] NRS, DD17/908, Extract from minutes of 23rd Scottish Aerodrome Board Meeting, November 7, 1949. Gleave, who in 1931 had won the competition for the Columbus Lighthouse, was also incidentally William Hardie Kininmonth's brother-in-law. The Scottish Aerodrome Board later commissioned him new terminals at Prestwick, effectively resulting in his resignation from the Board. See also: https://www.scottisharchitects.org.uk/apex/r/dsa/dsa/architects?p8_id=206874&session=8064695417139.

[17] NRS, DD17/908, Renfrew terminal building, May 22, 1950. No drawings were found of this project, as well as of Kininmonth's terminal.

[18] NRS DD17/908, Extract from minutes of 26th Scottish Aerodrome Board Meeting, July 10, 1949; Extract from Scottish Advisory Council for Civic Aviation Meeting, August 5, 1950.

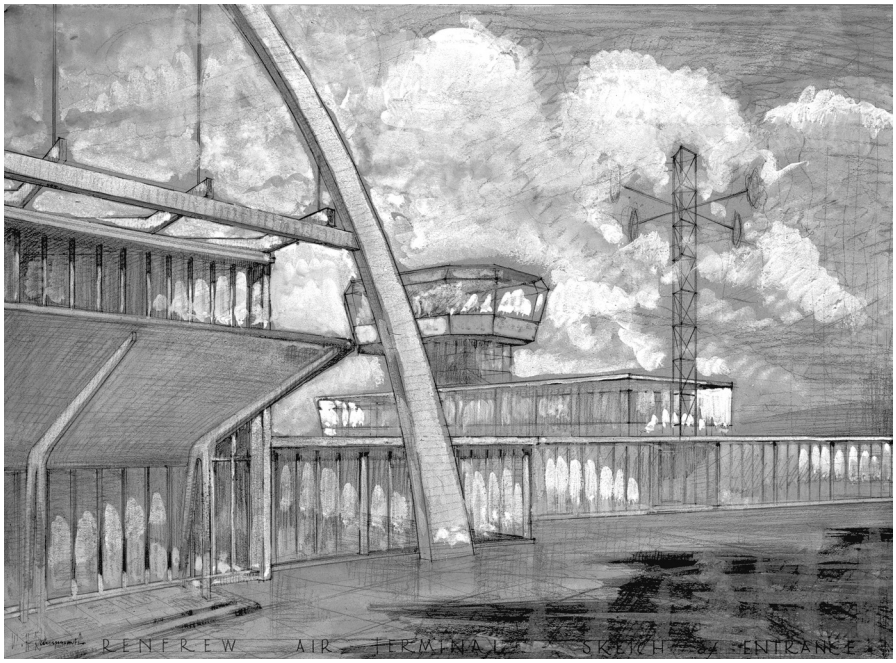
[19] NRS, DD17/908, Extract from minutes of 27th Scottish Aerodrome Board Meeting, August 24, 1950.

[20] NRS, DD17/945, Memorandum in regard to visit to Renfrew Airport on July 23, 1951.

[21] "News of the Week", *The Architect and Building News* 198, n. 4278 (1950): 637; "Architect for Airport Buildings", *The Builder* 180, n. 5629 (1951): 26. "Edinburgh Architect", *The Scotsman*, December 12, 1950. NRS, DD17/908, extract from the Minutes of the 29th Meeting of the Scottish Aerodrome Board, December 2, 1950. The second choice of architect for the terminal was Basil Spence.

[22] Charles McKean, *The Scottish Thirties: an architectural introduction* (Scottish Academic Press, 1987), 35–42.

[23] Alistair Fair, "'An Object Lesson in How Not to Get Things Done": Edinburgh's Unbuilt "Opera House", 1960–75, *Architectural Heritage* 27, n. 1 (2016): 110. https://doi.org/10.3366/arch.2017.0084.



8.2
Perspective drawing of the new terminals at Renfrew Airport, William Kininmonth. Historic Environment Scotland Collections, SC 702370, https://www.trove.scot/image/702370.

troversy of the proposed Opera House for Edinburgh, which remained unbuilt[24].
The Ministry for Civil Aviation "suggested and recommended" that Kininmonth "should be afforded the opportunity of visiting continental and transatlantic airports of comparable type to assist in drawing up plans"[25]. It is unclear whether this opportunity was ultimately afforded to him. It should be noted, however, that — as we will shortly see — the formal models employed in the Renfrew terminal's final design do not appear to be directly derived from any airport terminal already built at the time[26]. A first plan was discussed in London in April 1951 with the Ministry of Civil Aviation and was found to have a "number of unsatisfactory features", the first of which was most likely its cost, more than double the amount that would eventually become available[27]. This prompted, as the report called it, a "scaling down" and phasing of the design, with priority given to the central passenger block: from an initial estimate of 404.000 pounds, the final sum available to the project reached around 150.000[28]. The use of the term "scaling down", rather than the more generic "reduction" or "alteration", suggests that the unsatisfactory features in the first designs of the building may have been found more on the technical side of the project rather than in its architectural form, which was perhaps retained in the revision[29].
Meanwhile, in early 1951, the Scottish press published a report on Scottish aviation in general, and the development of Prestwick Airport as a substitute for Renfrew in particular, once again calling into question the very survival of the latter[30]. The report bluntly stated that Renfrew had "only a short life before it" due to high and unremovable obstacles (chimneys and shipping cranes) near the runways and the possible dock extension plans. Renfrew's immediate decommissioning was, however, firmly refused by the Ministry[31]. The proposal of a transfer to Prestwick of all services operating from Renfrew was further opposed by British European Airways on the grounds that Renfrew was still "the most appropriate terminus for their Scottish services", due to its close distance from Glasgow and the lack of a rapid connection between Prestwick and the city[32]. To counterbalance the report's likely effects, news of the approval of a new terminal soon circulated and was well received by the personnel working at Renfrew, who were likely troubled by the "general feeling of uncertainty as to how permanent the airport is"[33]. The report being made public is probably part of the reason — together with a steady traffic

[24] Fair, "'An Object Lesson in How Not to Get Things Done"', gives a detailed account of the vicissitudes of this project, as well as Kininmonth's standing in Edinburgh from the late 1960s onwards.
[25] "Scottish Air Services", *The Scotsman*, December 18, 1950. NRS, DD17/908, extract from the Minutes of the 29th Meeting of the Scottish Aerodrome Board, December 2, 1950.
[26] For an overview of the history of airport architecture, see Alastair Gordon, *Naked Airport: a cultural history of the world's most revolutionary structure* (Henry Holt and Company, 2014).
[27] NRS, DD17/908, extract from the Minutes of the 34th Meeting of the Scottish Aerodrome Board, April 9, 1950.
[28] No drawings have been found to document the first version of the terminal's design. NRS, DD17/908, extract from the Minutes of the 39th Meeting of the Scottish Aerodrome Board, April 9, 1950.
[29] The technical requirements for airport operations would have needed to be developed together with the consultancy of the Ministry and British European Airways.
[30] "Airports", *Daily Record* (Glasgow), February 16, 1951.
[31] "A Promise, a Denial — and a Proposal", *Daily Record* (Glasgow), February 16, 1951.
[32] "Prestwick and Renfrew. Airport Transfer Suggestion", *Belfast Newsletter*, February 16, 1951.
[33] NRS, DD17/945, Memorandum in regard to visit to Renfrew Airport, July 23, 1951.

8.3
Workers completing the control tower at Renfrew, November 1954. *The Builder*, 7 January 1955: 14.

increase — why a new terminal was deemed more than ever an "urgent need", to the effect that "an extensible part of the scheme or an alternative should be provided quickly for whatever money was likely to be made"[34]. The new terminal, in other words, needed both to be and feel permanent for operational and political reasons, and Scottish authorities thus reiterated to the Ministry the need to complete work by the 1953 summer season, when peak traffic was expected[35]. In late September 1952, "the architect had agreed that the necessary work could be done within the limits of the sum available" and, necessary preparations notwithstanding, "the way was clear to go ahead"[36]. In October 1952, final plans for the terminal were officially approved and work was expected to last about a year[37]. The new terminal facilities were then publicised as a state-of-the-art modern building, going as far as anticipating it as the "best airport outside London" to perhaps reinforce their necessity and partially also to justify expenses on an infrastructure that had been, with a degree of good reason, declared as doomed only a few months prior.[38]

In December 1952 work was set to start at the beginning of the new year on "one of the most modern [terminals] in the world, incorporating the latest features in terminal construction both in America and Europe"[39]. This claim for innovation was only partially true: while the gate system and passenger separation between arrivals and departures were still little used worldwide, covered walkways from aeroplane to terminal had been introduced in Gatwick as early as the 1930s, albeit with little success[40]. As soon as a final decision on the terminal was reached, a perspective sketch was widely circulated to the specialist and generalist press[41], where the terminal was described as a "Modernistic glass and concrete structure"[42]. Despite having begun with the preparations for the building site, the wisdom of investment on the airport was still questioned in the press in early 1953[43]. In April 1953, work on the terminal building finally started: it was declared to be designed to allow for extension and expansion, and was expected to be completed by summer 1954[44]. Delays were then reported in the building of the control tower, which would be completed slightly later, after the official inauguration, as evident by the workmen still visible in the press photos[45]. The inauguration of the new terminal — felt as something that should have been "a memorable occasion" — also overlapped with the much longer-lived and complex story of the proposed relocation of Renfrew's civil and military aircraft maintenance base to London, impacting the 650 people employed there[46]. This led to prolonged tensions

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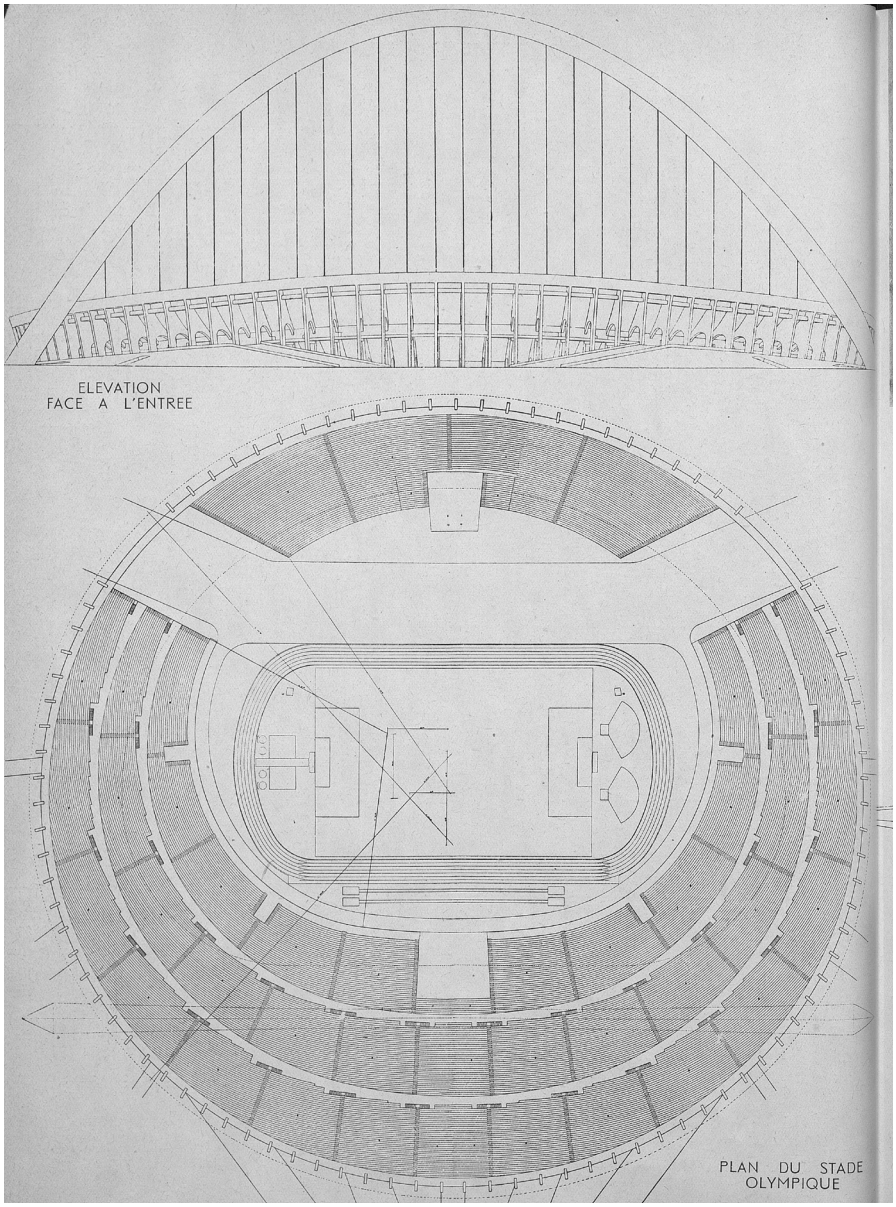
8.3

[34] NRS, DD17/908, extract from the Minutes of the 34th Meeting of the Scottish Aerodrome Board, April 9, 1950. The largest investment in those years was made on London Airport (later Heathrow) with new runways and terminals commissioned to Sir Frederick Gibberd.
[35] *Ibid.*
[36] "Renfrew Terminal Building. Construction as Early as Possible", *The Scotsman*, September 17, 1952.
[37] "New Airport Buildings", *The Building* 183, n. 5722 (1952): 564.
[38] "'Best Airport Outside London'. Renfrew Scheme Goes On", *Linlithgowshire Gazette*, June 27, 1952; "Work on Renfrew Airport", *Paisley Daily Express*, 23 June 1952; "Notes from the Industrial Centres. Scotland. Terminal Buildings at Renfrew Airport", *Engineering* 174 (July 1952): 14.
[39] "Renfrew Airport's New Terminal Building Work to Begin Shortly", *The Scotsman*, December 19, 1952
[40] Gordon, *Naked Airport*, 82-3.
[41] "Air Gateway to Scotland", *The Scotsman*, 26 February 1953; "Renfrew Extension. Work on New Terminal Building Begins", *The Scotsman*, February 26, 1953.
[42] "First Step in New Air H.Q.", *Daily Record*, February 26, 1953.
[43] "Renfrew Air Terminal. Big Developments Questioned", *The Scotsman*, February 25, 1953.
[44] "Proposed Terminal Building at Renfrew Airport", *Concrete and Constructional Engineering* 48, n. 4 (1953): 144.
[45] "Renfrew's New Air Terminal", *The Sphere*, December 4, 1954.
[46] NRS, DD17/911/1, Note from James Stuart to J.A. Boyd-Carpenter, October 12, 1954.



8.4
Oscar Niemeyer's project for an Olympic Stadium in Rio de Janeiro, *L'Architecture d'Aujourd'hui* 13-14 (1947): 42.

with the local trade unions, and it was perceived that, at least for the inauguration, it would have been unwise to celebrate while a political conflict was ongoing[47]. In a sense, while the passenger facilities had been "scaled up", at least in their architectural image, the engineering side of the airport's operations was being substantially "scaled down". The new terminal at Renfrew was expected to be ready for service in September 1954[48], and on 26 November 1954 the new terminal was finally publicly inaugurated, a few days after it was made fully operational, with the presence of at least one representative of the Ministry[49]. Local newspapers reported it as "the first airport in the United Kingdom to have a British-designed and equipped terminal for the construction"[50]; a statement well aligned with contemporary protectionism policies within the British civil aviation sector[51]. It was, as the press reported, the first permanent terminal building in the United Kingdom to be built on governmental funds — a few months before London Airport — and was almost unanimously recognised to be "of considerable architectural interest"[52].

[47] Much of the available archive material on Renfrew Airport concerns the maintenance base and its vicissitudes. Itself in part a "scaling down" story, it falls out of the scope of the present essay. See NRS, DD17/910, DD/17/911/1, DD/17/911/2, as well as the press coverage on *The Scotsman* for the years 1953-1955.

[48] "Air Services to Islands", *The Scotsman*, April 12, 1954.

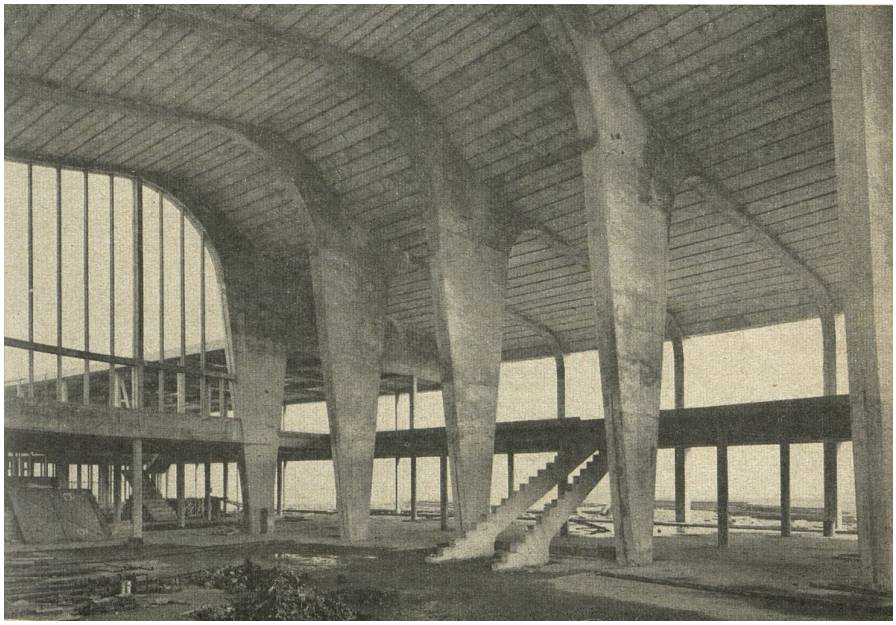
[49] "New Terminal Building at Renfrew. Distinctive Example of Modern Design", *The Scotsman*, 26 November 1954; "Renfrew Airport's New Lease of Life", *Edinburgh Evening News*, November 26, 1954.

[50] Sir Patrick Dollan, "Forty Years of Progress", *The Scotsman*, November 26, 1954.

[51] Devereux, "Jets across the Atlantic?", 105.

[52] *Industry and Employment in Scotland 1954. Presented by the Secretary of State for Scotland to Parliament by Command of Her Majesty April 1955*, White Paper Cmd. 9410 (Scottish Home Department, 1955), 57.

8.5
Renfrew terminal under construction, *The Architects' Journal* 29 April 1954: 513.



"All architecture is derivative"

To the architectural historian's trained eye, Renfrew's passenger terminal models might appear almost too obvious: Le Corbusier's 1932 unbuilt project for the Palace of the Soviets' auditorium and the Termini Railway Station in Rome, scaled down and combined. This would also have been true for contemporaries familiar with the monumental Corbusian arch for Moscow[53]. Despite having never been built, the structural system — evoking bowstring arch bridges — of cantilevered beams suspended through cables to a parabolic arch was undeniably fascinating: in the two decades separating the Corbusian project from Renfrew, others had attempted just as unsuccessfully to introduce it, most notably Oscar Niemeyer in his widely published project for a new stadium in Rio de Janeiro[54]. It should also be noted here that Kininmonth's choice of model appears to be specifically 8.4
oriented towards the parabolic arch as part of a structural system rather than towards the free-standing arch: despite perhaps sharing a common origin, the two fulfilled very distinct needs and had been proposed for markedly different situations[55].

As for the Termini station, it had been inaugurated in December 1950 — almost at the same time as Kininmonth's appointment — and was considered perhaps "the most modern terminal in Europe" at the time; it had been extensively published and praised in the British press[56]. The canopy at Termini was also a model publicly recognised by contemporaries, whereas other possible references were quoted — notably, Le Corbusier excepted — for the concrete parabolic arch.

In publishing full-page photographs of the Renfrew terminal under construction, where the "raw" concrete structure can be appreciated, the *Architects' Journal* drew attention to the curved roof, "reminiscent of the Rome Railway Terminus"[57]. Indeed, one of the two photographs clearly shows 8.5
the structural geometry of the interiors, all the more striking without glazing and furnishings, highlighting their cantilevered, curved shape, unmistakably derived from Montuori and Vitellozzi's project for Rome. *The Architect and Building News* perhaps came closest to the source in voicing its com- 8.6
menter's impression of the building site, that looked "as if a small child of the Rome railway station has travelled by air from Tait's Waterloo air terminal"[58]. Air terminals were hybrids between lounges 8.7
and ticket offices managed by airline companies, serving as city stations from where passengers could be transferred to the airports; their use was gradually abandoned when the model proved inadequate to the increasing numbers of passengers traveling by air[59]. In the case of London's Waterloo Terminal, one of the buildings for the 1951 Festival of Britain, the York Road entrance to the

[53] "The Palace of the Soviets, Moscow: Le Corbusier", *The Architectural Review* 71, n. 426 (1932): 196-200.

[54] "Proposed Stadium, Brazil", The Architects' Journal 102, n. 2646 (1945): 258; "Proposed National Stadium, Brazil", *Architectural Forum* 82, n. 6 (June 1945): 118-22; "Projet de Stade Olympique", *L'Architecture d'Aujourd'hui* 13-14 (1947): 41-3. A quite precise citation of the Moscow auditorium was also included in the 1936-1937 project for Rio de Janeiro's University City.

[55] Perhaps the most famous example of the free-standing arch is Eero Saarinen's Gateway Arch in St. Louis (designed in 1947-1948 but completed in 1965). Saarinen was accused of drawing too heavily from Adalberto Libera's proposed arch for the E42 in Rome, thus inadvertently evoking 'fascist monumentality'. It should be however noted that neither Libera's nor Saarinen's arches are parabolic: the former is an arc of a circle and the latter a two-nosed catenary. See William Graebner, "Gateway to Empire: An Interpretation of Eero Saarinen's 1948 Design for the St. Louis Arch", *Prospects* 18 (1993), 367–99, https://doi.org/10.1017/S0361233300004956; Robert Osserman, "Mathematics of the Gateway Arch", *Notices of the AMS* 57, n. 2 (2010): 220–9.

[56] "Railway Terminus at Rome", *The Architectural Review* (London) 109, n. 652 (1951): 208–16; "Rome. New Railway Station Opened", *The Architect's Journal* 113, n. 2941 (1951): 9; Philip Morton Shand, "The new 'Termini' Station, Rome", *Concrete Quarterly*, n. 15 (September 1952): 12–21.

[57] "Buildings in the News", *The Architects' Journal* 119, n. 3087 (1954): 512–3.

[58] "Events and Comments. Abner in Scotland", *The Architect and Building News* 205, n. 4 (1954): 104.

[59] Thomas N. Kirstein, "Take off in the City Centre", *Internationales Verkehrswesen* 73 (2021): 45–9.

6

6, a detail of the reinforced-concrete roof of the booking hall which extends to form a canopy over the roadway in front of the station. Behind can be seen part of the office block. 7, general view of the booking hall and canopy. The curved shape of the beams follows the profile of the ruins of the Agger Serviano, as can be seen in 9, on the facing page.

7

210

8.6
The new Termini Station in Rome, *The Architectural Review* 109, n. 652 (April 1951): 210.

London Underground, was reconverted to this purpose by British European Airways in May 1953[60]. Renfrew and the Waterloo air terminal share another common "ancestor": one of Le Corbusier's models for the Palace of the Soviets concrete arch was recognised by Jean-Louis Cohen to likely be Eugène Freyssinet's 1923 dirigible hangars in Orly, which had also been published, still under construction, on *L'Esprit Nouveau*[61]. Whereas for the Waterloo Air Terminal the hangars appear as the most evident model, mediated by the Palace of the Soviets assembly hall in that the parabolic arches serve as supports for a suspended ceiling (in this case curved rather than horizontal), for the Renfrew building the Palace of the Soviets is instead referenced directly: the crucial clue is in the radial rather than parallel arrangement of the cantilevered beams, which almost exactly replicates on a smaller scale the Corbusian auditorium[62]. The two arches would have in a way echoed each other: with the Glasgow-London route being one of the main services to and from Renfrew Airport, travelers to Glasgow would have departed from the Waterloo air terminal (and

8.8

[60] "Important notice for all Air Travellers", *Evening News* (London) 12 May 1953, 7. "Astragal...and Upstream", *The Architects' Journal* 117, n. 3039 (1953): 659.

[61] Jean-Louis Cohen, *Le Corbusier and the mystique of the USSR : theories and projects for Moscow, 1928-1936* (Princeton University Press, 1992), 175-7; Freyssinet was invited by Le Corbusier to collaborate to the project but declined. According to architect Gordon Stephenson, at the time an intern in the Rue de Sèvres *atelier*, the idea for the parabolic arch was introduced by engineer Gustave Lyon. Gordon Stephenson, "Chapters of Autobiography I-III", *Town Planning Review* 62, n. 1 (1991): 7–36.

[62] This radial arrangement distances somewhat Le Corbusier's parabolic arch from the bowstring arch commonly used for bridges. As a structural system for roofs, it was most notably employed by Auguste Perret for the Théâtre des Champs Elysées in Paris (1913) and by Alvar Aalto for the Sunila pulp mill (1936-38), as well as by Duilio Torres for the hangars at Linate Airport in Milan (1936). With a parabolic arch, it was also used by Luiz Nunes in the Escola Rural Alberto Torres in Recife (1935-1936).

THE PALACE OF THE SOVIETS, MOSCOW

surrounds the Kremlin and passes through the Red Square, where Lenin's tomb is situated and where all public demonstrations are held.

The organization of traffic on the roads leading to the Palace of Soviets, and those from the Palace to the Red Square, and the difficult problem of entering and leaving the building, which must sometimes contain 25,000 people, have to be taken into account, as well as the parking of cars, and the distribution of underground stations, some of which are already in construction. Moscow is bisected by the river, and to join together both parts of the town a new bridge is to be built.

The Palace of Soviets will be a social centre of the greatest importance, and a kind of modern forum in the political sense, in which all the problems of the new collective society will be discussed. The building is to provide a large assembly hall, to seat 15,000 persons, with a stage-arena on which the new methods of collective works and new inventions, etc., can be demonstrated. Special parts have been set aside for 300 members of the Council, members of the Soviet and foreign Press, and the diplomatic corps. Delegates are to be seated so that they can get into direct communication with the speaker. A chair for the speaker, a screen, and various means of demonstration technique are to be provided. The architect was also requested to solve various specific problems, such as the organization of the seating accommodation so that every member of the audience may easily reach the arena, and to arrange that there is the greatest possible conjunction between the stagework and the auditorium. The problem of acoustics has also to be taken into consideration; no mechanical arrangements are to be used. Another hall, to seat 6,000 people, is to be built for the work of congresses, conferences, and administrative and technical work. It is to be made soundproof from street noises. Occasionally this hall will be used as a theatre and will therefore contain all the necessary modern stage equipment. There is also to be a gallery to seat 2,000 spectators, with its own entrances and services. For the use of delegates and the public in both halls, restaurants and cloakrooms will be provided. Beside the two large halls, the scheme includes two small independent halls to hold 500 people each, a large library, exhibition rooms, departments for the secretariats, the Press and diplomatic corps, a wireless station, rooms for an orchestra, and many other secondary rooms and dressing rooms. The two small halls are to be built so that, if necessary, they can be used at the same time.

The preparation of this scheme was a very large task, and the Government of the U.S.S.R. were obliged to ask various architectural organizations to submit proposed schemes which could be utilized, if necessary, in the definite and final scheme. Most of the designs obtained in this way have shown great ingenuity, a very powerful spirit of invention, and a desire not to design the new scheme on the models of the past. It is true that very often the fantasies of the Soviet architects have carried them much too far, and some of them did not think about the special character of the scheme, about its scale, and about several technical difficulties; nevertheless, the designs of ARU, ASNOVA, SASS, WOPRA and LADOVSKY have shown solutions which in many ways meet the

LE CORBUSIER

1

PERRET

2

(1) *LE CORBUSIER'S* project for the Palace of Soviets. The design provides two separate halls. In front of the larger of the two there is a platform to be used for the grouping of processions. A sound reflector enables a speaker to address demonstrators collected there. A bridge unites the two halls. A reinforced concrete arch with beams holds up the roof. Both the small halls, to seat 500 people each, are separately accessible. All the administration offices are grouped in one building.

(2) *PERRET'S* designs. He divides both halls and creates an interior court. For the sake of symmetry he is obliged to make one of the buildings of unusual shape, and thus the administration rooms in the building are divided into two groups.

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8.7
Waterloo Air Terminal, London (circa 1954), via https://alondoninheritance.com/london-transport/the-waterloo-air-terminal/.

8.8
Le Corbusier's project for the Palace of the Soviets, *The Architectural Review* 71, n. 426 (May 1932).

its parabolic roof) and, at the end of their air journey, they would have arrived in Glasgow passing underneath Renfrew's parabolic arch (a symbolic "gateway to Scotland") — and vice-versa[63]. As a last common feature, both Le Corbusier's project for the Palace of the Soviets and the Renfrew building were tested through the use of a scale model. The former was used in order to control the acoustical performance of the auditorium and for plastic and cinematic effect: a film depicting it, with Le Corbusier playing the cello, was sent as part of the competition submission[64]; in Renfrew's case an acrylic glass model was used to directly test and model structural loads on the beams' section, with the results plotted in a deformometer and verified *in situ* as soon as scaffolding was removed[65]. Other clues as to the choice of models are given by Kininmonth himself, immediately after Renfrew's inauguration and in a later article on modern architecture in Scotland. In defending his approach of giving priority to aesthetic choices for an infrastructural building against "preconceived doctrine", he stated that

> Architecture is a microcosm within the greatest macrocosm of nature which it faithfully reflects in all its forms, whether we call these forms classicism, romanticism or merely functionalism. In this sense all architecture is derivative, and architects, like other men, are incapable of evolving anything new; they merely make their own little discoveries of age-old hidden principles, and apply them to the circumstances of the moment[66].

Furthermore, in declaring the need of being "open to influences derived from past memories or present experiences" and advocating for an "open mind and generous spirit" in architectural work, he motivated his freedom — and, perhaps, a right to aesthetic arbitrariness — in the use of models, even when those could be perceived as "unnecessary" from a purely functional point of view. Kininmonth also discussed Renfrew in 1957 in a two-part essay on The Scotsman on post-war architecture in Scotland, defining Glasgow and Edinburgh's airports as the best-known and publicised among the new buildings in Scotland. Almost contemporary with Renfrew (commissioned in 1952 and completed in 1956), the new Edinburgh airport at Turnhouse had been commissioned to Robert Matthew with requirements similar to those for Renfrew but with a significantly lower budget[67]. The two architects' responses to a similar problem were radically different: Matthew realised a geometrically clean modern terminal with its steel structure clad in wood and stone. According to Kininmonth, their approaches are not only due to different material conditions and restrictions, but also "the fundamental difference between them [Renfrew and Turnhouse] lies much deeper and is to be found in the psychological reaction of their architects to the romance and excitements of air travel"[68].

A Corbusian model would have indeed been most fitting for evocating the 'romance' of air travel, at least from an architect's perspective: it was certainly Le Corbusier, through its discussion of aircraft in *Vers une Architecture* (1923), and later the book *Aircraft* (1935), who might have arguably made the most significant contribution towards the popularisa-

[63] Kininmonth had visited the Festival of Britain (see Benjamin Pentreath, 'Adam House. Chambers Street, Edinburgh and Its Architectural Influences' (M.A. Honours, University of Edinburgh, 1994, 30) however, without drawings to provide a precise date for the introduction of the parabolic arch at Renfrew, this parallel can only be regarded as coincidental.

[64] Miguel Angel de La Cova Morillo-Velarde, *Maquetas de Le Corbusier. Técnicas, Objetos y Sujetos* (Editorial Universidad de Sevilla, 2016).

[65] "Buildings at Renfrew Airport", Concrete and Constructional Engineering XLIX, n. 12 (1954): 377–86.

[66] William Hardie Kininmonth, "Correspondence. Architecture and Criticism", *The Builder* 188, n. 5842 (1955): 204.

[67] Miles Glendinning, *Modern Architect : The Life and Times of Robert Matthew* (RIBA Publications, 2008), 159–63.

[68] William Hardie Kininmonth, "Post-War Architecture in Scotland. Contribution to the New Pattern of Building", *The Scotsman*, May 31, 1957.

tion, for the architecture world, of the fascination with aeroplanes and air travel. It must be noted, however, that most of the early attention was given to aircraft — and their hangars — rather than to the terminals, the buildings acting as the interface between people and the air. While the "romance" of flying was apparent from the onset, the aesthetic aspects of the airport passenger terminal were rarely theorised on[69]. Le Corbusier himself only in 1947 stated that, for the airport terminal, "il faut adopter une architecture à deux dimensions, en surface, en étendue [...]. La politesse n'est pas de vous faire passer sous des arcs de triomphe académiques, mais d'avoir organisé le bon accueil à échelle humaine"[70].

It was very difficult to imagine, in 1947, that the human scale and that of aircraft would quickly but steadily diverge, to a point where the problem of designing terminals that could properly provide human accommodation while avoiding appearing as miniatures next to the aeroplanes became evident. Besides the requirements of passenger flow regulation, an adequate dimensional ratio between the terminal building and the aircraft was also necessary from an aesthetic standpoint. The arch at Renfrew was likely dimensioned to be 14 metres high due to the needed compromise between a desired "spectacular building of the greatest publicity value — and of comparatively large dimension for the money available", height restrictions to guarantee flight safety, and available money[71]. Le Corbusier and Lyon's assembly hall for Moscow was designed to be about 90 metres high to achieve the maximum monumental effect, as was Niemeyer's even larger stadium: these concrete arches with cables can be reasonably considered as scale-independent — or, rather, effectively monumental by virtue of their ratio to the human being only — as long as they remained as deliberate, aesthetic gestures in the ideal space of competition entries. The passage from a (theoretically) widely applicable, deliberate aesthetic gesture to a real concrete structure, with all its specific constraints, meant that at Renfrew a very substantial scaling down of the parabolic arch needed to occur in order for it to be employed as the defining feature of the new terminal. This compromise's ultimate result was an exceptional reduction, with the arch being built as small as 1/7 of Le Corbusier's one for Moscow[72].

Thus reduced, it perhaps began to also show its limitations, particularly in its lack of adaptability to the ever-increasing scale of aeroplanes. In this way the Renfrew terminal resulted appropriately proportioned to the aircraft operating from there at the time of its inauguration in late 1954, mainly Vickers Viscounts and Douglas DC-3s which reached around 8 and 5 metres respectively in maximum height. It began to lose that character, giving a "miniature" effect in respect to the almost 12-metres-high Bristol Britannias and the 10 metres Vickers Vanguards operating from there in 1965, in the airport's last full year of operation[73]. These, however, seem to have been correctly predicted at the time of construction: published plans with the dimensions of aircraft parked near the terminal show them to be almost 30 m etres wide: coincident with the wingspan of the four-engined Bristol Britannia that in 1954 was still at the prototype stage[74].

8.9

[69] For an extensive discussion of the presence of the terminal as architecture in the inter-war and post-war literature, see David Pascoe, *Airspaces* (Reaktion books, 2004).

[70] Le Corbusier, "Urbanisme et Aéronautique", *Techniques et Architecture* 9-12 (1947), 463–7.

[71] "Renfrew Airport Buildings", *The Architect and Building News* 207, n. 5 (1955): 137–42. Various maps and reports in NRS, DD17/945 show how height restrictions around the airport were applied at 50 and 150 feet (around 15 and 42 metres respectively), depending on the position relative to the runways, for any new building.

[72] As far as I have been able to ascertain, it appears that the Renfrew terminal is the only instance where the structural system of Le Corbusier's project for the Palace of the Soviet has actually been built.

[73] NRS, DD17/1068, List of air services from Renfrew Airport, December 1965.

[74] "La nuova aerostazione di Glasgow", *Edilizia Moderna* n. 61 (1957): 39-42.

8.9
British European Airways DC-3s parked at Renfrew Airport (The John Stroud Collection, https://aflinghistory.con/about-john-stroud).

Fifteen minutes of fame

The Architectural Review, in publishing the Renfrew terminal as part of an issue dedicated to airport terminals, pointed out explicitly that "Renfrew has its own customs facilities and thus offers, *in miniature*, the services and problems of a major airport"[75].

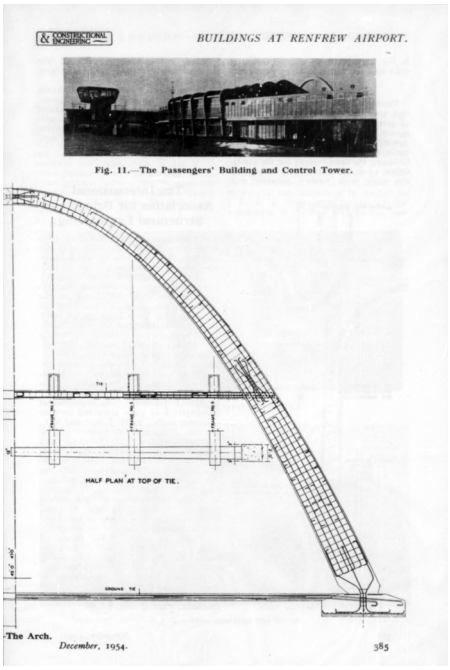
While extensively published in the British architectural press after its inauguration, most articles drew heavily from the press notice issued by the ministerial Office for Public Relations upon completion of the building, thus resulting essentially similar to each other; some notable differences, however, are worth expanding upon. The notice emphasised the compromise achieved between design and economy and laid out in terse terms its characteristics[76]. The press, on the other hand, often emphasised the role of aesthetics with respect to function — something that is not (perhaps unsurprisingly) included in the official account from the ministry. In fact, it was variously reported that the clients desired a striking building "of unfamiliar form" that might prove controversial, even if it remains unclear how "controversial" the terminal actually was. According to *The Scotsman*,

> The new air terminal at Renfrew is a controversial building. It is contemporary in the widest sense of the word, incorporating the latest ideas in design, materials and lay-out. Its construction was restricted by cost, and the stipulated requirements were for a building of unfamiliar form built at low cost[77].

However, little controversy appears to have been published in the local press, and the terminal building was generally praised. Only a reader of *The Builder* sent criticisms to the editor, and Kininmonth was allowed to publish a reply, where he sent for comparison his design for a new hall for the University of Edinburgh, Adam House[79]. It had been developed concurrently with Renfrew, yet it was strikingly different in its use of a neoclassical language to accommodate the building in front of Robert Adam's Old College, whose language it freely (and modernly) reinterpreted[80]. The point of contention was that, in the architect's description of the project, "when a choice could be made between aesthetics and utility, preference was given to the former[81]", a somewhat unusual stance since an infrastructural building such as an airport terminal would have been expected to be as functional as possible. Yet, great care was taken in avoiding that claim, since the reasons for building the terminal went beyond mere functionality: the survival of the airport also depended on the "spectacular" effect produced by the building. It is in light of this ambivalence that a specious declaration reading faintly as an *excusatio non petita* might be read and understood. The

8.10

[75] "Renfrew Airport", *The Architectural Review* 118, n. 703 (1955): 11 (our emphasis).
[76] NRS, DD12/1502, Press notice, Office for Public Relations, Ministry of Civil Aviation and Transport, 26 November 1954.
[77] "New Terminal Building at Renfrew. Distinctive Example of Modern Design", *The Scotsman*, 26 November 1954.
[79] For an extensive account on Adam House, see Benjamin Pentreath, "Classical Modernism in Fifties Edinburgh: Adam House, by William Kininmonth, 1950–1954", *Architectural Heritage* 5, n. 1 (1994), 97–110, https://doi.org/10.3366/arch.1994.5.1.97.
[80] Kenneth Grover, "Correspondence. Renfrew Airport Buildings", *The Builder* 188, n. 5840 (1955): 128; William Hardie Kininmonth, "Correspondence. Architecture and Criticism", *The Builder* 188, n. 5842 (1955): 204.
[81] "New Terminal Building at Renfrew Airport", *The Builder* 188, n. 5838 (1955): 10–6.



8.10
Edinburgh. Adam House, designed by William Kininmoth (photo by the A.).

8.11
Reinforcement bars for the concrete arch, *Concrete & Constructional Engineering* XLIX, n. 12, (December 1954).

official press notice stated that the specific system of concrete beams suspended at one end from a parabolic arch was adopted only for structural reasons "rather than for dramatic effect" and declared that it was "the logical outcome of conditions" to allow the building to "float" on the watertable layer, "much as water spiders or other similar animals"[82]. This description extended beyond the British Isles, reaching Italy in *Edilizia Moderna* and the United States in *The Architectural Record*[83]. Interestingly enough, technical publications such as *Concrete & Constructional Engineering and Prefabrication* decided to honour the professional expertise of their readers and opted not to report this specious argument, the former instead giving ample space to engineering details such as a cross section of the parabolic arch showing the reinforcement bars, and the stress diagrams of the concrete beams, and the latter to the materials and techniques used. 8.11

The terminal was selected for the *Architects' Journal* "Buildings of the year" list for 1954, along with much more renowned buildings such as Alison and Peter Smithson's Huntstanton school, Lubetkin and Tecton's flats in Finsbury and Powell and Moya's Churchill Gardens in Pimlico. Richards remarked the terminals' "unorthodox forms of construction, like their roof suspended from parabolic reinforced concrete arches" that "should help to make the passenger feel at home in a world of machines". The main point of interest, just as for most publications, was naturally the central passenger handling block with the parabolic arch, even if, according to Richards, the terminal lacked some of the "lightness, grace and inevitability one associates with the best aircraft design", even though the arch is absent from the only picture of the terminals in the article, taken as if from one of the aircraft parked there[84]. Some photos are taken at dusk, allowing the sky to be light enough to provide contrast for the unlit parabolic arch, while at the same time drawing attention to the glazing of the block, which is lit from within: echoing the press communication of a building that "could look fine by day and by night"[85]. 8.12

The buildings also enjoyed a sort of "fifteen minutes of fame" immediately following their inauguration: the construction firm (A.A. Stuart & Sons of Glasgow) published advertisements using a photo of the Renfrew terminal, and it was featured in a 1957 exhibition titled "Building in Concrete" hosted at the Building Centre in London[86]. A delegation of Soviet engineers even visited Renfrew in 1955, travelling through Europe, they probably had known of the terminal through the mediation of Soviet architectural magazines[87].

[82] NRS, DD12/1502, Press notice, Office for Public Relations, Ministry of Civil Aviation and Transport, 26 November 1954.
[83] "La nuova aerostazione di Glasgow", *Edilizia Moderna* n. 61 (1957): 39-42; "Glasgow's Air Terminal Emulates a Water Spider", *The Architectural Record* 119, n. 3 (1956): 352, 354.
[84] James Maude Richards, "Buildings of the Year: 1954", *The Architects' Journal* 121, n. 3125 (1955): 85-100.
[85] "Renfrew Airport", *The Architectural Review* 118, n. 703 (1955): 11.
[86] "Advertising for A.A. Stuart & Sons (Glasgow) Ltd.", *Concrete and Constructional Engineering*, January 1956; "Building in Reinforced Concrete", *Official Architecture and Planning* 20, n. 7 (1957): 344–5.
[87] Christian Toson, *Il contributo ingegneristico e architettonico italiano durante il periodo delle riforme architettoniche di Chruščëv* (1954-1964) (Ph.D Diss., Iuav University of Venice, 2022), 101. I would like to thank Christian Toson for first pointing out to me the Renfrew terminal.

Renfrew Airport

Architects: Rowand Anderson, Kininmonth and Paul.

Though a feeder airport, whose function is to connect Glasgow with the great international airlines, Renfrew has its own customs facilities and thus offers, in miniature, the services and problems of a major airport. Like Zurich, it presents a convex façade on the air-side with a passenger-handling block occupying the centre of the structure, and running back to an entrance canopy on the land-side. But because of its smallness, however, there is no need for two-level circulation. This leaves the upper level on the air-side free for a restaurant and viewing-terrace overlooking the apron.

The structure of the lateral office wings is fairly conventional, but the central passenger-handling block is of interest. Reinforced concrete portal frames of an unusual form rise from ground level on the air-side, wrap over the headroom of the viewing-restaurant and drop toward the entrance on the land-side. Due to the curvature of the plan, to which they are radii, they also converge toward the land-side, but instead of being grounded in the normal manner, their ends are gathered by a single concrete beam, hung on tension members from a parabolic concrete arch. This leaves the entrance wall free of structural members—it is entirely of double-glazing, as is the rest of the block.

8.12
Renfrew terminal by night, *The Architectural Review* 118, n. 703, July 1955: 11.

Oblivion

Despite various declarations of the terminal's easy adaptability due to the use of glass and its capacity for extension, the actual realisation of those extensions proved necessary much sooner than perhaps anticipated and was less easy to implement. Only four years after its inauguration, the terminal at Renfrew required an extension of both passenger facilities and the car park; a dedicated hotel near the airport was considered but apparently never built[88]. The rapid increase in traffic, favoured by aeroplanes that were quickly becoming larger and faster, made it so that in just five years' time the terminal would be "bursting at the seams", forcing the building of temporary accommodations up until 1960 to allow an increasingly larger flux of passengers[89]. The Glasgow Fair held in 1959 could be nicknamed the "Air Fair", and each passing summer season strained the building's capacity[90]. The striking parabolic arch proved too small to allow for an extension of the buildings while preserving their architectural character, and perhaps at the beginning of

[88] "Renfrew Airport Extensions", *The Builder* 195, n. 6027 (1958): 591.
[89] "Scotland's Troubled Airports", *Flight International* 78, n. 2696 (1960), 764; "Questions in the Commons", *Flight International* 78, n. 2680 (1960): 130; "UK's Busiest Airports", *Flight International* 77, n. 2659 (1960): 294; "Renfrew and Abbotsinch", *Flight International* 77, n. 2658 (1960): 254.
[90] NRS, DD17/945.

the 1960s, the ever-increasing popularisation of air transport made the imaginary evoked by the arch less effective. The problems highlighted throughout the 1950s circa the objective difficulties of Renfrew Airport to keep up with the speed in which the infrastructure would need to be scaled up were constantly proven to be concrete and — excepting a brief moment of respite from congestion — put the new terminals (in the space of a few years furnished with new small extensions and annexes) rapidly in a condition similar to the WWI hangars that preceded them, or as J. M. Richards put it some years prior:

> It has been perversely argued that the best character at all to aim at in airport buildings, and the most evocative of the adventure of travel, is the informal insubstantial character already possessed by those random collections of shacks with which many airports have been reluctantly making do for years, but that involves philosophical issues too deep to go into now[91].

Soon, it became apparent that the "new lease of life" given to Renfrew Airport was approaching its end, and only a complete relocation could satisfactorily address air traffic congestion. In November 1960, the Minister of Aviation announced that the naval air station at Abbotsinch, a short distance from Renfrew, would be transferred from the navy and converted into a civilian airport to replace Renfrew by 1963[92]. The actual substitution took place in 1966, when the new — and current — airport for Glasgow was inaugurated, its terminal designed by Kininmonth's former partner, Basil Spence. The faction campaigning for Prestwick as the main airport for Glasgow, following Abercrombie and Matthew's recommendations, ultimately did not win, and the airport was shifted a short distance away, in a location where the infrastructure — and all the necessary safety measures that came with them concerning the height of nearby buildings — could be more easily scaled up if needed.

The terminal, operational for twelve years, would remain abandoned for about twelve more years. In the meantime, the ministry had been paying 4000 pounds per year for the upkeep of the rapidly deteriorating abandoned terminal[93]. Being built by a still living architect, a listing proposal which would have guaranteed the terminal's survival was not accepted by the Historic Building Council[94]. In the early 1970s, two prospective investors advanced projects to reconvert the terminal building — the runways had become part of the M8 motorway — into a shopping centre for the residential district that had in the meantime replaced the airport premises. Despite projects and political discussions maintaining that the building represented the only example in the area of the early 1950s "style" of concrete architecture, neither of the two proposals advanced for a conversion of the building was followed to completion[95]. In a twist of irony, the scale of the building proved again unsuitable for the new function (it was at the same time too small and too large for its envisaged use) and the terminal was demolished towards the end of the 1970s[96]. 8.13

The task at Renfrew in the early 1950s had been to build new passenger facilities, the contact point between the infrastructure and the public, with a "spectacular" image that could justify expenses and investment on an airport that was soon to be closed: for this reason, a full infrastructural

[91] Richards, "Buildings of the Year: 1954", 89.
[92] "Abbotsinch It Is", *Flight International* 78, n. 2698 (1960): 852; "Conversion to Civil Airport", *The Builder* 199, n. 6133 (1960): 1033. Documentation is held in NRS, DD17/945 and DD17/1068.
[93] NRS, DD12/3284, Letter from the Town Clerk to the Secretary of the Scottish Development Department, March 21, 1973.
[94] NRS, DD12/3284, Letter from Maurice Lindsay to D. McColl, February 6, 1973.
[95] NRS, DD12/3284, Written statement by Renfrew County Council in support of proposed development, January 24, 1974.
[96] NRS, DD12/3284, Proposals for the reconversion of Renfrew Airport, 1971.

8.13
The recently demolished Renfrew Terminal in June 1978. (Photo: Robert Tweedly, https://www.flickr.com/photos/16537854@N03/3481172502/).

update was not envisaged and perhaps not even practicable. The architect, faced with the task of not only fulfilling functional needs but also of building an image, turned to two most peculiar modern examples: choosing to prioritise the aesthetic element over the functional, where they conflicted, resulted in a memorable building that, despite claims to the contrary, was much less flexible than circumstances demanded. In using as the defining feature a parabolic arch, which was first "scaled up" from Freyssinet's 58 m hangars to almost double by Le Corbusier, then scaled down to 14 m by Kininmonth, combining it with the entrance to Rome Termini Railway Station, itself sightly scaled down, the architect appears to have used some elements pertaining to the language of modernity (one by then part of a consolidated imaginary, the other newer) as part of "one set of influences", in a free, almost eclectic, interpretation of modernism. Detached from their original function — although never straying too far from it — and reduced in size, these elements are employed in a local context to give permanence, with striking effect, to a precarious infrastructure. The amount of years of this "new lease of life" to Renfrew Airport depended ultimately on a matter of scale where its architecture was directly involved: at which point the passenger terminal would become so disproportionate in respect to aircraft as to render it a miniature, rather than an appropriate and adequate building not just to fulfil a function, but also to evoke emotion in the air traveller and provide accommodation at an human scale? That point would also coincide with the moment when the whole infrastructure would become inadequate for its intended function, with runways too short to accommodate new, larger jet aircraft: the airport would then truly have been doomed to obsolescence. Ultimately, the decision to scale and combine two models — one evocative of a recent, yet "romantic" past, the other an acknowledgement of the latest developments in infrastructural terminal architecture — sacrificing effective flexibility for the sake of aesthetics proved unsuitable in the face of an unprecedented, and to a certain extent unpredictable, evolution on the larger scale of civil aviation.