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Abadan: planning and architecture under the Anglo-Iranian Oil Company

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Industry and urbanization were brought to south-west Iran when large quantities of oil were struck there in the early years of this century. This paper explores the development of Abadan from these beginnings to the 1950s, and particularly the housing and planning forms adopted by the Anglo-Iranian Oil Company and its architect James M. Wilson. Abadan was in effect a colonial company town whose early development combined spacious bungalow compounds for British expatriate workers, barrack-like lines of huts for labour recruited locally and from India, and a rapidly overcrowded 'native town' under local municipal control. The Company used Wilson's expertise in an attempt to answer the physical problems created by the growth of Abadan between the wars and to deflect pressure exerted both by Iranian nationalists and the British government. In the garden suburb of Bawarda he created a model solution that used planning and housing form to represent ethnic and social harmony under the discreet paternal benevolence of the Company. This, however, was inappropriate to Abadan's problems and quickly eclipsed by the political events that led to the Company's expulsion in 1951.

Introduction

The large-scale consumption of oil as a source of energy has had profound consequences for urban development and globalization in the twentieth century. Generally less considered, however, have been the particular physical and spatial forms of urban and industrial development required for the production and supply of oil. This paper discusses the case of the Iranian town of Abadan, a virtual creation of the oil industry. As the key urban locus for the extraction of a valuable commodity from a dependent economy, Abadan had many of the characteristics of a colonial city [1]. Demographically this involved the transfer of a small cadre of British workers, the creation of an Iranian technical elite, and the transformation of large numbers of rural people into an industrial proletariat. There is a need for more case studies of the nature of modern colonial architecture and planning, and especially of the meaning of exported planning forms within late colonial contexts. Furthermore, British involvement in urbanization in the Middle East is a subject that still requires more detailed research [2]. An examination of Abadan is germane to both these needs and as, in the wake of new national and imperial storms the

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dust refuses to settle in the Persian Gulf, so the region's fractured urban history might repay consideration.

Development

Under the Anglo-Iranian Oil Company from the 1920s until 1951, Abadan might best be described as a collection of urban forms gathered around an oil refinery [3]. In the eyes of the Company and its British employees it had no unitary character; though there was a 'town' (also referred to as the bazaar) this was not the Abadan that they knew but an overcrowded insalubrious area, the supplier of non-European labour, the ubiquitous 'native city' of colonial imagination. Abadan's refinery was the end of a pipeline, pooling the liquid and passing it through plants for all stages of refining before pumping it onto tankers to be sent around the world. The refinery was an ever-expanding industrial zone of tank farms, distillation units, and cracking plants. It was the pre-eminent fact of life in Abadan, the one reason why urbanism had come to this salty infertile island in the south-west of Iran. By the late 1940s it had become the largest refinery in the world, with the AIOC's assets in Abadan representing Britain's most significant single overseas investment [4].

The origins of Abadan must be dated to around 1910. Oil had first been struck in reasonable quantities at Masjid-i-Suleiman, in the hills of south-west Persia, in 1908. Soon after this the Anglo-Persian Oil Company (as it was then called) was formed, and by 1911 a pipeline was completed, carrying oil from the wells in the hills 130 miles away to the island of Abadan on the Shatt-al-Arab river. When the first British oilmen had investigated Abadan in 1909 they discovered that almost all building resources and facilities would have to be imported, including trained artisans, sand, stone and lime, and even, to a great extent, bricks. A construction industry would have to be created, to serve the new oil industry. And in the mid-1930s Costain, the large contracting and civil engineering firm, began to meet this challenge mainly by importing building materials on a large scale.

A map of 1910 shows that the refinery was quickly established and an area laid out for bungalows (Fig. 1). The first building to be erected was an iron structure lined with wood. The 'first pucka bungalow' followed soon after: a brick building 'constructed in the local style, and having a mat and "chandle" roof, that is, a roof constructed of poles of small diameter placed close together and overlaid with mats (made from date palm leaves) covered with earth' [5]. The upper part of this was used for senior staff, the lower for a general office and dispensary. After a few years this was replaced by 'No. 1 Bungalow', the first building of any permanence in Abadan. Early maps show a simple distribution pattern (Fig. 2). The refinery – the main reason for making these maps – was represented as a grouping of tanks and other structures spreading out in regular formation from the side of the Shatt. The materials for the plant itself were shipped from Britain. Offices and other works buildings were positioned in the narrow strip between the refinery and the river. Labourers lived in tents and mud huts in the barrack-like 'coolie lines' located to the south-east. The 'bungalow area', also known as Braim, bordered the refinery to its south-west.

By the early 1920s Braim had developed from a sprinkling of buildings to an extendable pattern of roads including specialist bachelor barracks (known as 'Slidevalve' and 'Sunshine' and built in 1923) and large two-storeyed bungalows for the more senior

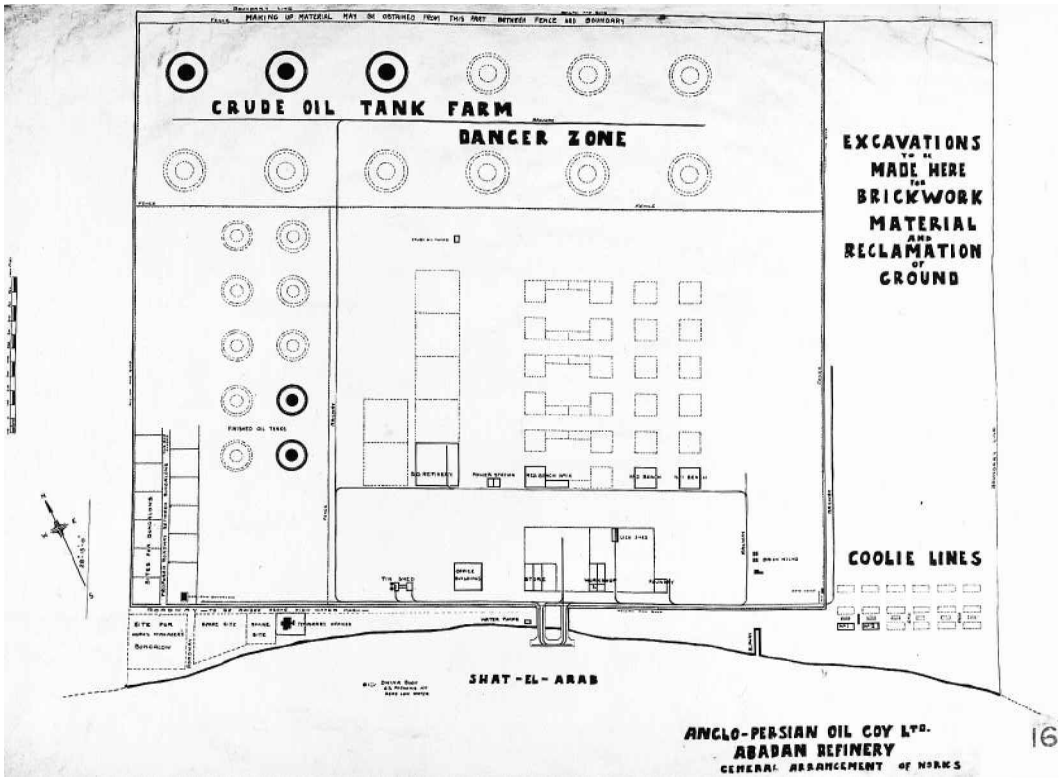

Figure 1. Abadan, map of 1910. (Source: BP Archive).

officials nearer the river. Typically these buildings countered the heat with thick walls, shutters, and wide arcaded verandahs. There were also the beginnings of a set of communal buildings such as the Gymkhana Club, as well as many gardens. Indeed, the establishment of Braim as a green oasis was a major undertaking involving the transportation of materials and extensive labour on irrigation and planting as well as the employment of professional gardeners who had worked at Kew and New Delhi [6].

'Abadan Town' is first indicated in a map of 1928 (Fig. 3), a little way to the south-east of the refinery and separated from the older 'coolie lines' by a newly laid-out park. It was established and seems to have developed in an *ad hoc* manner as a high density concentration both of indigenous elements that pre-existed the refinery, and of new dwellings needed to house the labourers working on and around the refinery and inadequately provided for by the Company. Contact between the 'town' and Braim was largely made via servant intermediaries. Both residential areas served the refinery but they were also separated by it: the 'bungalow area' spaciously laid out to the west in favour of the prevailing winds; the 'town' as a compact yet increasingly stifled area to the east, the 'open sore within our operations' as one AIOC official described it [7]. The refinery, in between Braim and the 'town', was both the physical focus of Abadan and, by the nature

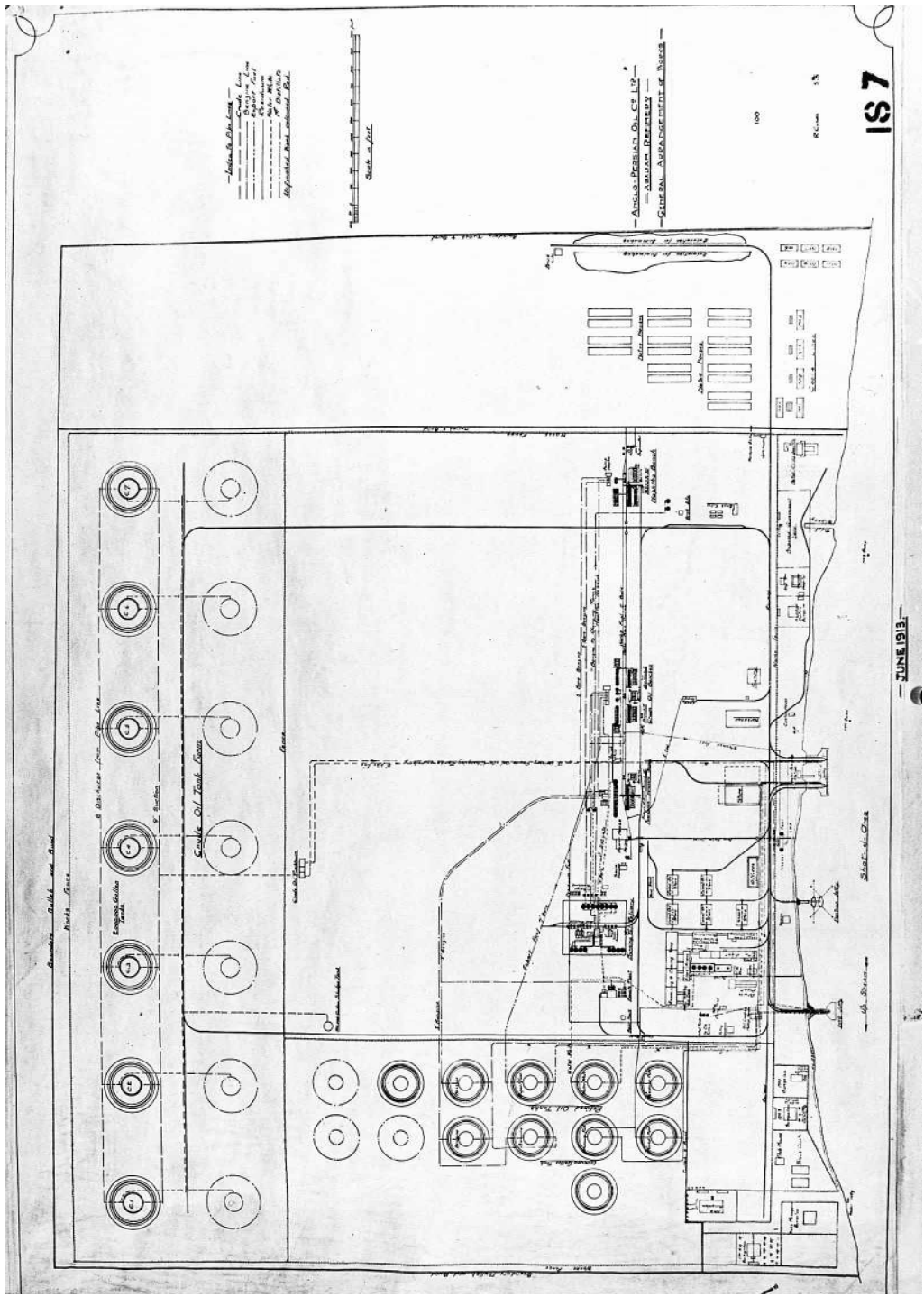

Figure 2. Abadan, map of 1913. (Source: BP Archive).

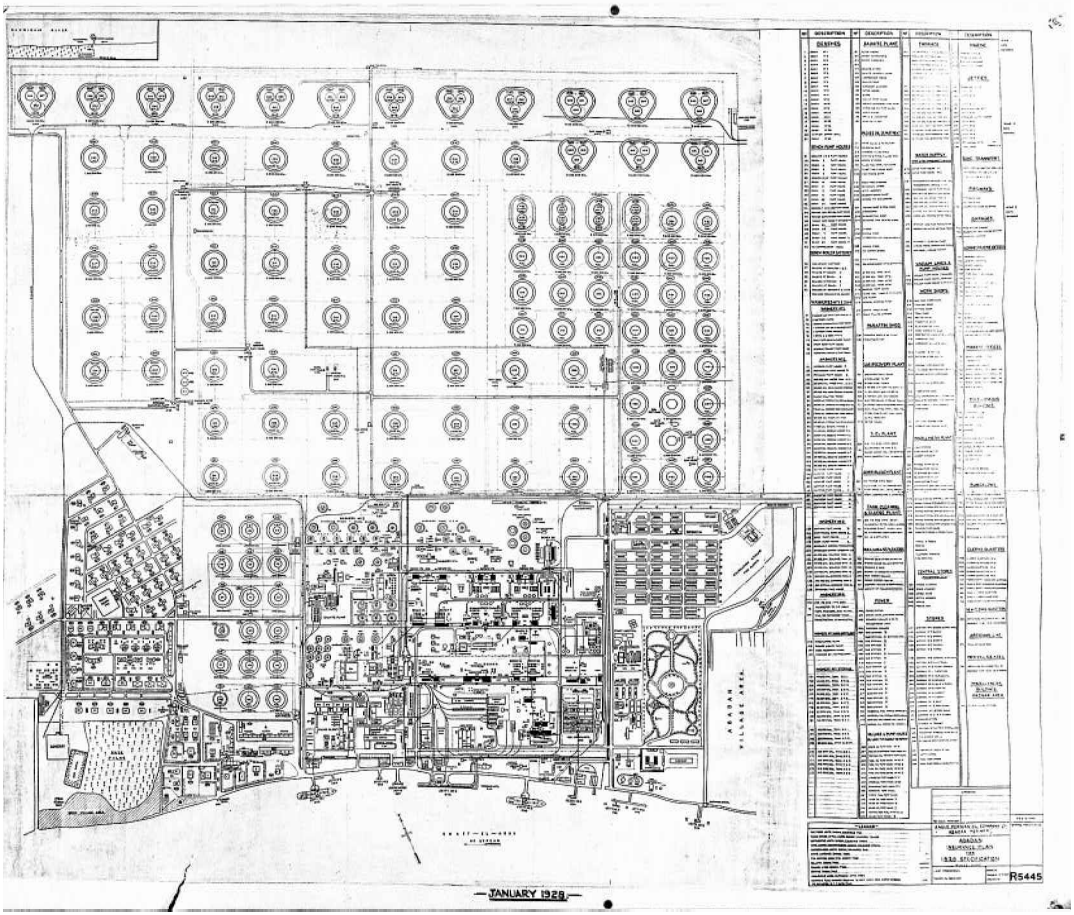

Figure 3. Abadan, map of 1928. (Source: BP Archive).

of residential development, also formed a curtain or cordon sanitaire between these ill-matched twins. An almost complete segregation was carried through accommodation, as well as the use of buses, clubs and cinemas. The function, character, location and materials of three of Abadan's four major built elements had been established from the beginning. The fourth element – the professionally planned layout of residential estates – was to be introduced in the 1930s.

It has been remarked that the British commonly denied any unitary character to Abadan, and a vital element of this disavowal of urbanity was the adoption of the bungalow as the predominant building type in the European area. Anthony King, the major sociologist-historian of the bungalow, has analysed the diffusion of the bungalow type as symptomatic of the social and spatial division of labour within colonial urban development:

> It was part of the built environment of a colonial political economy: the planter's bungalow, part of a system of cash-crop production operated by representatives of a particular culture in which local

labour ('natives') lived in self-built huts and managers lived in an evolved culture-specific dwelling form known as a 'bungalow' [8].

Originally the bungalow had developed as a specialized Anglo-Indian dwelling type in colonial India. With its plantation, or agro-industrial origins, it had arrived in Britain from the 1890s 'as a cultural model of living in *non-urban*, or *ex-urban* areas'. As it became a suburban dwelling in Anglophone countries, so also, from the last years of the nineteenth century onwards, it was re-exported 'for the managers of mines, railways, plantations, managing British capital and exporting raw material to industrial economies at the core' [9]. Abadan typifies this development, with the proviso that here the plantation model prevailed rather than that of developed industrial production epitomized by the refinery. The logic of location in Abadan was to situate both the managerial/technical elite and the labour power close to the refinery, if at opposite sides of it. Subsequently, as I will show later, bungalow construction took on a mass-producible form through the planning of Garden Suburb extensions to Abadan, though now a small range of housing types, including the bungalow, were the attempted solution to both elite and labour housing provision.

Company town

From the 1920s when it became a boom town until the final banishment of the AIOC from Iran in 1951, Abadan expanded exponentially, drawing in labour both directly and through sub-contractors from south-west Iran, the Persian Gulf and India. By 1951 its population had swollen to 200 000 [10]. Although the 'town' remained nominally under local municipal control, Abadan as a whole might truthfully be described as a company town. Most of Abadan was owned and operated by the AIOC, and those parts of it under ostensibly autonomous local control owed their livelihood to the Company's activities. As the town developed so the Company increasingly provided educational, transport, health and leisure facilities; even its own traffic police. But while the works dominated the site, as with most definable company towns, they were given no symbolic dimension; beyond a functional office building the Company felt no necessity to establish architectural representations of the unity of its enterprise centred on the place of industry. Indeed before the 1930s there were no such intended representations anywhere in Abadan. When the Company did sponsor such architecture its efforts were trammelled by two factors: on the one hand, the knowledge that while the Company's *de facto* influence in Abadan was predominant, it had, *de jure*, a shared responsibility with the Iranian authorities; on the other hand, the Company's development of facilities in Abadan heavily favoured the small European section of its population and indeed its policy towards Abadan as a whole was largely to treat the town as a place divided by race.

The AIOC's initial policy in Abadan can be situated somewhere between the paternalist ideology of company towns in Britain like Bournville and the absolute power exerted in those company towns that developed following the great mineral rushes in South Africa. On the latter A.J. Christopher has written:

> Company control over the workforce was regarded as vital to reducing costs through the maintenance

of a steady, sober workforce... Closed segregated compounds were introduced for the control of the African workers who were restricted in movement for the duration of their work contract. Within the compound the worker was housed (at high density), fed, clothed and only given access to company facilities. The European labour force was controlled through the construction of a company village ... where tied company housing was provided for both married and single mine workers. A range of facilities was offered including a club and a school, to create a self-contained community dependent upon the mining company [11].

Without its severity there are nonetheless echoes of this regime in the AIOC policy toward Abadan.

The drive for production and profit in Abadan was softened by other considerations. First, if Iran was economically weak, industrially undeveloped and militarily vulnerable, it was still no colonial backyard, and the terms of the Company's concession (dating back to the first oil exploration in 1901), although highly favourable, were still, literally, concessionary (and, following a long quarrel, renegotiated in 1933). Second, the Europeans who worked in Abadan were employed for their high level of managerial expertise or specialist technical skills. For them the attractions of living in Abadan were a combination of relatively generous levels of pay, good recreational facilities, and a culturally contained colonial form of life – the 'colonial third culture' [12]. To the mores of a cocooned yet spacious middle class life were added the odd token of Persian culture. More evident were the environmental adaptations and language of Anglo-India: there were memsahibs and sahibs, tiffin and chota-hazry, godowns, ayahs, and punkahs.

While the Company acted as a combination of welfare state and British Raj for its European employees – *imperium in imperio* as one observer put it [13] – its responsibilities for the huge majority of its non-European employees were based on less substantial expectations on both sides, and were a regular matter for bargaining with the Iranian government. Insofar as a social order was defined for the non-Europeans it was centred on labour disciplines and the Company-imposed rules that followed on from accepting the privileges of health care, education and housing. This situation served the Company reasonably well, but the best expression of its peculiar imbalance of resources and rewards can be seen in the development of urban space and housing form in Abadan. The Company's resources were directed in favour of the construction of housing and other facilities for its senior staff. Housing, like Company employees, was divided into three classes: fully-furnished housing for British staff and the few senior Iranians; partly-furnished accommodation for non-European junior staff; and unfurnished facilities for wage-earning labour. In the early years senior staff housing predominated and housing for labour and often even junior staff was left as a matter for the market or the municipality [14]. The large numbers of contract labourers were not regarded by the Company as its responsibility and lived in shanty towns on the edges of Company and municipal areas. In effect, though there was little formal segregation, racial segregation was exerted through patterns of habitation. Later, even when this policy was bitterly attacked by the Iranian government, the Company's investment in housing schemes was still modest relative to the size of the problem. By the end of the Second World War there were 65 461 AIOC employees in Abadan, only 2357 of whom were British [15]. Even as late as 1948 new senior staff housing was still as high as half the total for both junior staff and labour together, and by 1951 only 18.5% of labour lived in Company quarters [16]. The Company defended its

policy as one geared to produce a good general quality of housing rather than a rapid production of quantity [17]. 'Quality' here may be taken to stand for a culture-specific set of values objectified in the form of excessive spending on modern ancillary infrastructure (electricity, sewers, roads, and, for some, air conditioning) at the expense of realistic housing solutions for the swollen and stifled non-European areas. The Company's propaganda machine favoured these items, and especially the provision of sports facilities, medical services and education, though in fact the latter two were hardly adequate to need [18].

The architect/planner

The moment when professional design skills were first introduced into Abadan can also be seen as the moment when the AIOC augmented its efforts to ensure political stability to offset the social disruption consequent upon rapid industrial change. In part this entailed, after 1933, the greater 'Iranianization' of the workforce and the training of a small number of Iranians in Britain. But there was also recognition of a need for a new propaganda of architecture and urbanism. The architect who was given this job, which involved an extraordinary responsibility for town planning schemes as well as large numbers of buildings in Abadan and elsewhere, is hardly known today.

James Mollison Wilson (1887–1965) was one of a number of young architects who were given considerable scope for their professional skills in parts of the British Empire after the First World War [19]. Following war service in the Middle East, Wilson had stayed on in the newly-mandated territory of Iraq, first organizing the Public Works Department and then, from 1920 to 1926, acting as its Director of Public Works. The guiding experience that Wilson brought to these jobs, apart from his obvious presence on the spot as part of an occupying army, was his work as an assistant to Sir Edwin Lutyens at New Delhi from 1913 to 1916 [20]. From 1935 he partnered Harold C. Mason, who had been Government Architect in Iraq from 1921 to 1935. Most of the firm's work for the AIOC, however, seems to have been designed by Wilson (rather belatedly, in 1944 he was formally recognized as the Company architect). In fact Wilson had received commissions from the AIOC since 1927, the work rapidly mushrooming in the 1930s from the design of individual buildings to the planning of new large residential areas especially for Abadan but also in other Company areas at Masjid-i-Suleiman, Agha Jari, Gach Saran, Kermanshah and Bandar Mashur. In addition he produced town plans for the Iraq Petroleum Company at Arrapha, Kirkuk, and for the Kuwait Oil Company at Ahmadi [21]. R.K. Home has recently categorized the various types of planners that worked in British colonies at this period. In Home's terms Wilson was neither in colonial service (like W.H. McLean) nor a 'peripatetic propagandist' (like Patrick Geddes or Charles Reade). Rather he fitted the type embodied by H.V. Lanchester in India or Albert Thompson in Nigeria: 'a consultant architect brought out either for specific assignments or longer periods' [22]. The use of such consultants was typical of areas under indirect rule, and especially for mining, railway and administrative towns in less urbanized parts of the empire [23].

Before Wilson, Abadan's more substantial buildings had been built by Company engineers usually employing a serviceable formula of arcaded verandahs surrounding brick

structures or steel-girdered godowns [24]. In Iran, Wilson found a distinct architectural language that walked a middle line between the Company's two best-known public architectural expressions in England: Britannic House (1920–1924), their headquarters at Finsbury Circus, London, designed by Lutyens in a witty modern neo-Roman; and the AIOC pavilion at the British Empire Exhibition, Wembley (1924), a pseudo-Persian 'khan' [25]. Wilson had shown in his AIOC Offices in Tehran (1930–1) that he was quite capable of working in an overt Persian idiom when the urban context was also a matter of delicate political association [26]. But elsewhere, as we will see with the Abadan Technical Institute and especially in his Abadan housing, Wilson generally worked in an abstracted or absorptive version of local styles. This was characterized, throughout all grades of housing and whether for one- or two-storey bungalows, by flat roofs, uninflected *chajjas*, courtyards at the rear for Iranian accommodation, deep-set clerestories for ventilation, small but telling variations in the laying of brickwork, and, surprisingly often, an absence of verandahs (Fig. 4). Occasionally, as in the tower houses at Bawarda or the Dutch-style houses that faced onto its garden circles (Fig. 5), or even the barn-like stepped gables of some artisan housing in Bahmashir, Wilson deployed other housing types or styles at strategic points in his urban layout.

Figure 4. Housing at Bahmashir, Abadan, by J.M. Wilson. (Source: Wilson Mason and Partners).

Figure 5. House at Bawarda, Abadan, by J.M. Wilson. (Photo: Wilson Mason and Partners).

The planned new areas in Abadan were to be treated as dormitory estates effecting the dispersal and discipline of social pathologies. In origin and intention these estates go back to the late 1920s when the Company devised a scheme to answer the threat of social disorder posed by the overcrowded 'town'. This pressure-cooker effect, with the 'town' inhibited from expanding in most directions, inevitably calls to mind what happened both to the Indian areas of the old city of Delhi and the medinas in north African towns like Rabat and Casablanca [27]. The planned solution in Abadan would take the form of 'nuclei of small townships in several (four or five) distinct areas, well separated from one another, and on Company leased in preference to State ground. A small township is more easily and efficiently controlled than a large one... Being far removed from the present town, activities within the latter will gradually wither' [28]. Only belatedly did Wilson or the AIOC even begin to realize that these problems required a regional planning vision and by then they either lacked the will or were too far out of step with the Iranian government to seek such a solution [29].

By the late 1940s Abadan's new estates were being laid out and constructed all over the island, filling the space between the two waterways, assuming motorization and thus forcing a dependence upon Company bus transportation into the refinery. There was no overall scheme to link up these estates, indeed their patchwork placement across the island seemed to imply that Abadan could develop additively, piece-by-piece across the desert as

needs and resources arose. For non-European staff Segoush-i-Braim and Amirabad were located to the north and Bawarda-i-Shemali to the south. For non-European labour Bahar and Ferahabad were sited beside the Bahmanshir river; Ahmedabad and Bahmashir just east of the town; and Jamshid to the south-east. To the north-west an extension of Braim was laid out for European staff. All of these areas, apart from Jamshid and Ahmedabad, took a Garden Suburb form and all, apart from Ahmedabad (built by the Karun Engineering Company for the municipality), were designed by Wilson using a variety of different house types, sizes and styles.

But the first planned estate in Abadan remains the most interesting demonstration of Wilson's and the Company's attitudes towards the whole town. In 1934 Wilson presented a report on Abadan together with a design for a new housing development at Bawarda, on the other side of the bazaar from the refinery. 'Since the War', Wilson reported, 'a very great and widespread spirit of Nationalism has been introduced and fostered throughout the Middle East... Though the Company probably incurs less of this [jealousy] than the political services do elsewhere, it must introduce measures to meet it' [30]. If the new concession was one such measure then housing was to be another. Wilson pointed particularly to the disparities in housing provision as contributing most to the dangerous divide between the Iranian and British employees. He proposed to meet this problem with a new residential area, to create Bawarda as a kind of manifesto of racial mixing, an experiment in non-segregation whose very design would 'afford that link or bridge over the present gulf between these two groups of individuals' [31].

Garden Suburb

Bawarda's primary inspiration was Lutyens's remodelling of the Garden City and City Beautiful ideas at New Delhi (1911–1940). Lutyens had already been party to a mutant form of Ebenezer Howard's original Garden City idea in the Garden Suburb at Hampstead. Here Howard's central concepts of new satellite towns, surrounded by rural belts, combining the best of urban and rural values, self-managed and self-governed, and elevating the pursuit of 'health, light and air' above other communal imperatives, were already traduced. At New Delhi Wilson would have seen and participated in a further mistranslation of the original, one where the Garden City was married to an unlikely partner in the modern American version of the Baroque city, the City Beautiful. The marriage enabled a great imperial display of ethnic and political hierarchies and a rhetoric of historical assimilation: long ceremonial axes focused on a viceregal acropolis framed by symmetrical buildings for the corps of civil servants; vertical (by placement on heights) and horizontal (by distance) discriminations of residence reflecting hierarchies of income, rank and race; and all the spatial inscriptions of autocracy such as radial avenues, terminal vistas, circuses, circumferential roads linking dissecting boulevards, and so on. New Delhi consisted, as Robert Irving has described it, of 'contradictory and paradoxical juxtapositions of Beaux Arts features and garden city environs, of monumental axial boulevards lined with one-storey bungalows'. New Delhi was *rus in urbe*: 'a garden city punctuated by urban oases' [32].

By the 1930s the Garden City was a well-established international planning model.

Howard's internationalist aspirations had been smoothly realized in various national and international Garden City associations, conferences and journals, and Garden Cities and Garden Suburbs could be found worldwide, not only in British imperial possessions but also in the USA, Japan, Europe and Australia. But with its widespread influence so an increasingly amorphous, open-ended group of socio-political aims and aesthetic forms had come to dilute Howard's Garden City. New Delhi was also Stanley Adshead's model at Lusaka (from 1931 onwards) in Northern Rhodesia. Here Garden City concepts guided the functional planning of the new capital city into zones but failed to cater for the African labour force upon which the city depended [33]. Like Wilson, Adshead worked with three classes of housing and spread his low density European bungalow estates expansively and somewhat incoherently across the land. In Haifa and elsewhere in Palestine, Garden Cities were established to forward the aims of Zionist colonization. Such Levantine cities avoided the arts and crafts forms associated with their original inspiration in Britain in favour of German modernism [34].

In using the Garden City as his model Wilson was, in part, returning to one of its original ideals as an engine of social harmony. He may have been reminded of Unwin and Parker's Garden City ideals by Braim's clubby, vigorously outdoor life, and relaxed low densities. But as R.K. Home has pointed out, 'a major conflict of philosophy existed between the garden city ideal of efficient, harmonious communal living and the segregation principles upon which colonial rule relied' [35]. Briefly, it seems, Wilson was attempting to resolve this conflict in his planning for Abadan.

At Bawarda, Wilson proposed and then laid out a showcase vision of Company paternalism, a model, if necessarily fragmented, addition to the town (Figs 6 and 7). The area was already defined on all four sides by the Shatt-al-Arab to the south-west, a creek to the north-west, oil pipelines to the north-east, and a road and tank farm to the south-east. In effect these formed a kind of cordon sanitaire around Bawarda, helping particularly, as Wilson observed, to prevent the 'risk' of 'the town overflowing' into the new area [36]. Its crucial orientation was to the north-east where the road running parallel to the pipeline led out past the 'town' and refinery to Braim, the British bungalow area. Wilson established a new axis leading from this point diagonally across to the centre of the area. He marked this junction point with the 'town', as Lutyens had used Connaught Place to mark the transition from old to new Delhi, with a scaled-down *rond-point*. Furthermore the entry point significance of this junction was also indicated by locating a new cinema (completed in 1939) beside it and by creating a gateway effect through the location of tower houses at the beginning of the new diagonal road (Fig. 8). The other residential roads were laid out running east–west at right-angles to this diagonal axis, with housing initially of three types and placed within generous gardens and other markers of open space. Differentiation between European and Iranian housing would be made by size of sites rather than their location [37]. In the centre and shielding Bawarda from the Shatt-al-Arab, Wilson located gardens, playgrounds and sportsgrounds, all arranged symmetrically but at 45° to the main axis. A triangular circuit of gently curving roads and circuses marked out this garden area. Intended for senior Iranian staff, large 'Dutch' style houses with gables faced onto these circuses (Fig. 5).

Bawarda's most curious feature, especially by comparison with New Delhi and Hampstead, was the absence of any climactic focus in the form of monumental buildings

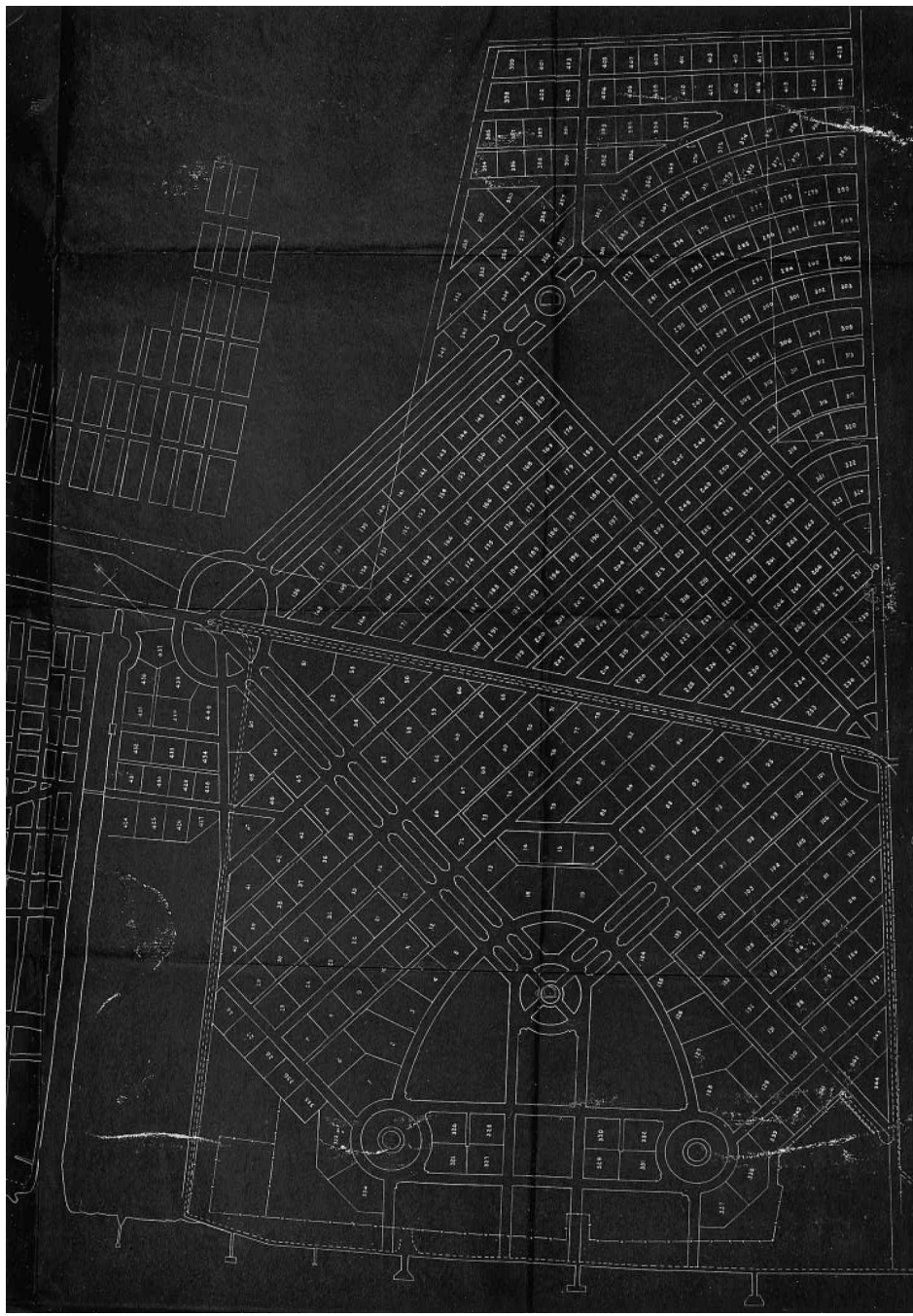

Figure 6. Bawarda, Abadan. Blueprint of 1934 plan by J.M. Wilson. (Source: BP Archive).

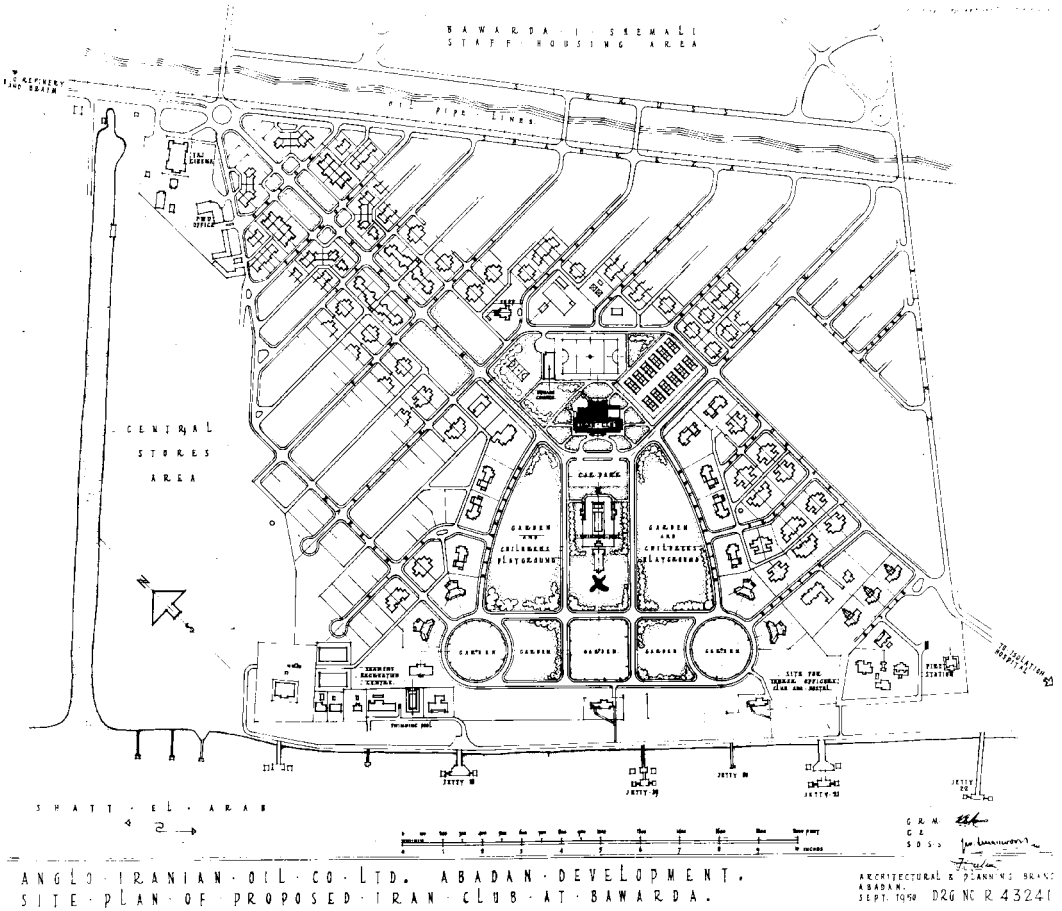

Figure 7. Bawarda, Abadan, 1950 plan. (Source: Wilson Mason and Partners).

and, consequently, no overt public meaning to its processional routes, no visible authority. Bawarda's Baroque gymnastics and portentous symmetries closed on no consummating institutions but merely a hopefully significant space. Genealogically, the *rond-points* of Versailles had become circular gardens or slow-turning roundabouts. No apparent reason would exist for Bawarda's symmetries until in 1950 Wilson proposed siting a new Iran Club (for Iranian clerical staff) at the junction of the main diagonal and the area of gardens (Fig. 7). Belatedly, Wilson had borrowed this idea, via Hampstead, from New Earswick and even perhaps Bedford Park. But the siting of social and public buildings, insofar as they were needed at Bawarda, had played no part in the planning of the estate [38]. The Abadan Technical Institute, placed to the north-east and beyond the pipelines, was designed by Wilson in 1938, after Bawarda had been laid out (Fig. 9). The Institute was established to train Iranians to fill graded posts. Its clocktower, an elegant monument to the new temporal

Figure 8. Bawarda, Abadan, *c.* 1950. (Photo: Wilson Mason and Partners).

Figure 9. Abadan Technical Institute, Abadan. (Photo: Wilson Mason and Partners).

disciplines, would have been visible for some distance, yet the Institute seems to have been deliberately not aligned with Bawarda's garden axis (Fig. 10). Inevitably, this nearly-but-not-quite alignment evokes those monuments of past Indian empires that New Delhi's axes pointed to but often, by virtue of geometric priorities, just missed.

Wilson intended there to be no planned differentiation in terms of sites between European and Iranian residences. He designed three house types to cater for the three classes of employees intended to be housed in Bawarda [39]. Of these a high proportion were intended for middle grades of married Iranians. But in fact the only Iranians who lived in Bawarda were those few, generally educated in British universities, who had attained senior positions in the Abadan hierarchy and become part of the Company's 'great machine' [40]. The reason for this, according to one of the Company's managing directors, was that 'In order to popularise the Bawarda area amongst senior Iranians we purposely allocated accommodation built for the Iranians to married British staff' [41]. Wilson assumed that any Iranian living in Bawarda would desire British conventions of domestic life: 'In all my considerations on this matter', he wrote, 'I have assumed that the purdah system will be abandoned and the houses in the new area will be designed along the lines of

Figure 10. View of Bawarda, *c.* 1950. (Photo: BP Archive).

a European house with such modifications as climatic conditions impose' [42]. The unreformed points system, by which Company housing was allocated largely by seniority rather than longevity of service or basic rate of pay [43], continued to ensure an implicit apartheid with a few token exceptions.

Bawarda never exerted the miraculous powers that Wilson had imagined for it. In 1951 Mossadeq's Iranian nationalist movement boiled over. The 1933 agreement was anulled and Bawarda's British citizens were cut off for some time from their co-nationals in Braim by groups of rioters coming from the 'town' [44]. The existence of some senior Iranian staff living in the same development as their British counterparts was now manifestly an insufficient token of the Company's good intentions. In fact the very spaciousness of the plots in Bawarda and its generous and largely redundant road provision could only be provocative to the Iranians in the 'town'. In the face of potential violence the Company, without military support from the Labour Government in Britain, could hardly trust to the allegiances of the Iranian army. Its withdrawal from Abadan in 1951 drew to an end forty years of exclusive oil exploitation in south-west Iran. In this time Abadan had become one of the most important towns in the production of oil globally. An empire within an empire was now transformed first into a nationalized industry and then into part of an international consortium.

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Notes and references

1. Here I use the broad definition deployed by Anthony King: A.D. King, *Urbanism, Colonialism, and the World Economy*, London and New York: Routledge 1990, pp. 17–20.
2. The most recent relevant works are R. Home, British colonial town planning in the Middle East: The work of T.H. McLean, *Planning History* **12** (1991) 4–9; G. Herbert and S. Sosnovsky, *Bauhaus on the Carmel and the Crossroads of Empire: Architecture and Planning in Haifa during the British Mandate*, Jerusalem: Yad Itzhak Ben-Zvi, 1993; E. Efrat, British town planning perspectives of Jerusalem in transition, *Planning Perspectives* **8** (1993) 377–393; and N. Payton, The machine in the garden city: Patrick Geddes' plan for Tel Aviv, *Planning Perspectives* **10** (1995) 359–381.
3. It was founded as the Anglo-Persian Oil Company in 1909, changed its name to the Anglo-Iranian Oil Company in 1935, and finally to the British Petroleum Company in 1954. From 1914 the British government held a controlling share in the AIOC.
4. J.H. Bamberg, *The History of the British Petroleum Company, Volume 2, The Anglo-Iranian Years, 1928–1954*, Cambridge: Cambridge University Press, 1994, p. 384.
5. *The Naft* **7** (July 1931) 16.
6. *The Naft* **11** (October 1935) 7.

7. British Petroleum (BP) Archives, University of Warwick 59011. In 1929 the total population was estimated at 60 000: BP 59011.
8. A.D. King, *op. cit.* [1], p. 118; see also A. D. King, *The Bungalow, the Production of a Global Culture*, Oxford: Clarendon, 1995, pp. 259–263.
9. A.D. King, *op. cit.* [1], pp. 118, 120–124.
10. International Labour Organisation, *Labour Conditions in the Oil Industry in Iran*, Geneva, International Labour Organisation, 1950, p. 5.
11. A.J. Christopher, *The British Empire at its Zenith*, London: Croom Helm, 1988, p. 103.
12. A.D. King, *Colonial Urban Development: Culture, Social Power and Environment*, London: Routledge, 1976, p. 59. These and other comments on the British way of life in Abadan are based on interviews with AIOC employees who lived there.
13. *The Memoirs of Lord Gladwyn*, London: Weidenfeld and Nicolson, 1972, p. 21.
14. BP 67267.
15. J.H. Bamberg, *op. cit.* [4], pp. 246–247.
16. BP 53217, 68186.
17. 'Quality', for example, might mean not building cheaper bungalows in which bedrooms opened directly onto sitting-rooms: BP 67590. The general policy was criticized by the International Labour Organisation and the British labour attaché in Iran: see International Labour Organisation, *op. cit.* [10]; FO 371/61984.
18. For contemporary criticism see L.P. Elwell-Sutton, *Persian Oil: A Study in Power Politics*, London: Lawrence and Wishart, 1955. Elwell-Sutton, a former AIOC employee, was the Broadcasting Attaché to the British Legation in Tehran.
19. For Wilson see RIBA British Architectural Library Biog File; and C.H. Lindsey Smith, *JM The Story of an Architect*, privately published, no date.
20. M. Richardson, *Sketches by Edwin Lutyens*, London: Academy Editions, 1994, p. 104.
21. C.H. Lindsey Smith, *op. cit.* [19], p. 63.
22. R.K. Home, Town planning and Garden Cities in the British colonial empire 1910–1940, *Planning Perspectives* 5 (1990) 23–24.
23. *Ibid*, pp. 25–26. Home cites Lusaka, Kaduna, Port Harcourt, Enugu Jos, and even New Delhi.
24. See, for example, BP 29198.
25. *Petroleum Times* (24 May 1924) 741.
26. See *The Naft* 8 (March 1932) 32. The facade of this building was partly redesigned by Aghai Elgar, a local British-trained architect: BP 54561.
27. N. Evenson, *The Indian Metropolis: A View Toward the West*, New Haven and London, Yale University Press, 1989, pp. 149–50; J. Abu-Lughod, *Rabat: Urban Apartheid in Morocco*. Princeton: Princeton University Press, 1980.
28. BP 59011.
29. Wilson sent a copy of T.H. Huxley's book on the Tennessee Valley Authority to one of the Company's Directors in October 1943, writing 'It is really an amazing piece of work and though it is very different in many respects from the problems we have to face in Abadan, it does have a bearing on it in the broad principles': BP 68848.
30. BP 49673.
31. *Ibid.*
32. R.G. Irving, *Indian Summer: Lutyens, Baker and New Delhi*, New Haven and London: Yale, 1981, pp. 79, 88.
33. J. Collins, Lusaka: urban planning in a British colony, 1931–1964, in Gordon Cherry (ed.) *Shaping an Urban World*, London: Mansell, 1980, pp. 227–242.
34. G. Herbert and S. Sosnovsky, *op. cit.* [2].
35. R.K. Home, *op. cit.* [22], 32.

36. BP 49673. There were also fears of actual epidemics spreading from the town: BP 67590.
37. BP 49673. Wilson designed the nursing quarters to have separate sitting-rooms, dining-rooms, kitchens and even entrances for Iranian and European nurses.
38. *Ibid.*
39. BP 67590.
40. BP 67627, p. 50.
41. *Ibid*, p. 51.
42. BP 49673.
43. International Labour Organisation, *op. cit.* [10], p. 33.
44. For a contemporary account of these events see N. Kemp, *Abadan. A First-hand Account of the Persian Oil Crisis*, London: Allan Wingate, 1953.