

SOUTH AFRICAN ARCHITECTURAL RECORD

THE JOURNAL OF THE CAPE, NATAL, ORANGE FREE STATE AND
TRANSVAAL PROVINCIAL INSTITUTES OF SOUTH AFRICAN ARCHITECTS
AND THE CHAPTER OF SOUTH AFRICAN QUANTITY SURVEYORS.
PHONE 34-2921 VOLUME THIRTY-ONE NUMBER TEN
611, KELVIN HOUSE, 75, MARSHALL STREET, JOHANNESBURG.
JOINT EDITORS: PROFESSOR G. E. PEARSE, W. D. HOWIE.

CONTENTS FOR OCTOBER 1946

THE COVER ILLUSTRATION — *Spiral Chute, Crane and Dock Train*

he docks may have, as in Europe a standard port-provided equipment of portal cranes, or the individualized more flexible services of stevedoring companies with lift trucks, dock trains and diversified power driven and gravity-conveyors to supplement ship's tackle operation. Some of the special equipment, like the elaborate banana loading of Los Angeles, or the fertilizer sacks spirally chuted right into the ship's hold, forecast ingenious progress in freight handling technique.

SEA-LAND TRANSFERS, by Richard J. Neutra, A.I.A., Architect and Consultant	241
STUDENTS' FORUM	255
CONTEMPORARY JOURNALS	257
BOOK REVIEW	258
NOTES AND NEWS	258

The Editors will be glad to consider any MSS., photographs or sketches submitted to them, but they should be accompanied by stamped addressed envelopes for return if unsuitable. In case of loss or injury they cannot hold themselves responsible for MSS., photographs or sketches, and publication in the Journal can alone be taken as evidence of acceptance. The name and address of the owner should be placed on the back of all pictures and MSS. The Institute does not hold itself responsible for the opinions expressed by contributors. Annual subscription £1 10s. direct from the Secretary.



ST. THOMAS
VIRGIN ISLANDS

ST. THOMAS, VIRGIN ISLANDS, WEST INDIES: A typical port without hinterland; it is the historical counterpart to Porto Belo, the famous isthmus transfer of 16th century Spanish trade from the Atlantic to Pacific, the "South Sea" and greater Peru. St. Thomas and Porto Belo make up the earliest examples of ports in the Western Hemisphere.

SEA - LAND TRANSFERS

RICHARD J. NEUTRA, A.I.A.
ARCHITECT AND CONSULTANT

HISTORICAL PRECEDENTS

The very first world renowned and coveted ports of the western hemisphere were, I believe, St. Thomas, in the Virgin Islands, and Porto Belo, on the north coast of Panama. One is still quaintly alive under its recently appointed native governor. The other, with its renaissance ruins in a pretty, inaccessible bay, is being turned, with difficulty, into a tourist excursion point. In the 16th century they grandly illustrated those two distinguishable historical types: The Transfer and The Port Without a Hinterland.

Through Porto Belo, for more than four generations, before buccaneer Henry Morgan sacked it thoroughly in 1668, went all the precious metals of Peru that were shipped up from Lima to the great dividing isthmus, and again all the manufactured commodities and all the adventurous passengers from back home, en route to New Spain beyond the seas and mountains.

By contrast St. Thomas was an end in itself, the hideout, the pirate's den, the black market, the gambling spot of the Caribbean. It became all of that pretty soon after the Columbus fleet, groping along, had found its passage between these lovely isles, so fit for ambush and so little connected with anything beyond them.

But generally speaking, many seaports had for long been points at which regular voyages simply seemed to come to their end, to *Terminale*. Rio de Janeiro, by no means on an island like St. Thomas, is typical for this sort of a colonial port, which, rather isolated by itself, develops to repeat in time the towns of the home country, or even surpass them, but from which no great inland route takes its start.

"Inner Brazil" is even at this late date amazingly undeveloped, in other words, full of promise—and Rio still has much less of a hinterland than, for example, Santos-Sao Paulo to the south.

PORTS AND HINTERLAND

In very recent times, it was surprising how short a distance one could drive an automobile inland out of the metropolitan area of so vast a city as Shanghai. In many historical cases like these, the port almost seemed to justify the expression *Terminal*.

If it did not definitely remain just that, it at least greatly delayed and filtered the forward movement of people and goods;

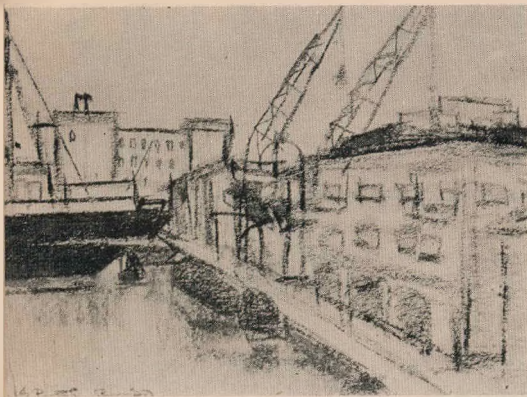
it became a sedimenting pool, beyond which this movement sluggishly seeped and spread—sometimes with almost imperceptible slowness. However, as Porto Belo shows, there are notable exceptions, and a curious variety in the genetics of sea ports.

Some of them, even in colonial countries, developed, like Buenos Aires, after the "hinterland" (which here was opened up from the Far West), and then later turned into stopgaps, when they had succeeded in reversing the flow of culturally accentuated commodities and significant mental imports.

We use these terms, because we must never forget that there is, in varying degrees, something like a mental-cultural exhalation about the goods that traffic around the globe: Soya beans have it less than building materials, machinery, automobiles and copies of exposed motion picture film—which transfer with them a good deal of the modes, ways, and behaviour patterns of their country of origin.



FAR EAST, COLONIAL-PORTUGUESE PORT OF MACAO: Water fronts used to have their architectural flourish, and, even with their habitual depravity, were more personalized and more in human scale than the exhaustingly far-flung, monotonously stretching, un-over-seable shore installations of late Victorian ports. In Chinese-Portuguese Macao, the ship-to-brothel distance is as short as the walk a man from a buccaneer crew had to take on shore in St. Thomas of the Virgins to pawn his bit of booty and to get roaring drunk after. Modern ports will be more orderly and sanitary than those of the olden days, but they will also, beyond their technification, be more human than they have been recently.



NAPLES, WATER FRONT IN NEED OF REJUVENATION: Ah, Naples!—a glamorous name: but it was a drab, essentially 19th century water front, which the Germans blasted to bits before they left. Two and three story warehouses, with diminutive aprons in front, cast the shadow wherein a tired longshoreman could rest his head on a rubbish heap to hold siesta. Naples will have a new and a greatly promising start like La Havre, Marseille, Hamburg. It undoubtedly should not be resurrected the old way in a new day.

As we pointed out, the vast Argentina, in those first three centuries of precious metal exploitation in the new Spanish countries beyond the seas, was penetrated at a snail's pace from Bolivia and Peru. All goods and colonists from the mother country would arrive at the coastfair of Panama, then, after passing the land bridge and "Southern Sea," would proceed to Callao. Whatever was not absorbed in the high-up-under the sky andean centers, would at last, and tediously, travel down into the Southern Pampas, in which, world interest was to develop only at a much later date.

Then, and only then, Buenos Aires started near the river-mouth its fantastic ascent, to become the greatest harbour of the South Atlantic—and that without any such particular natural topography or setting as helped Montevideo, to bring about its growth.

MAN-MADE PORTS

Nature was here overtaken by doings of man, as in the construction of many a modern port. San Pedro, Los Angeles, which naturally can not compare with the unique bays of San Francisco and an ample number of similar cases, would encourage us not to let things happen fatalistically and to correct fortune by plan.

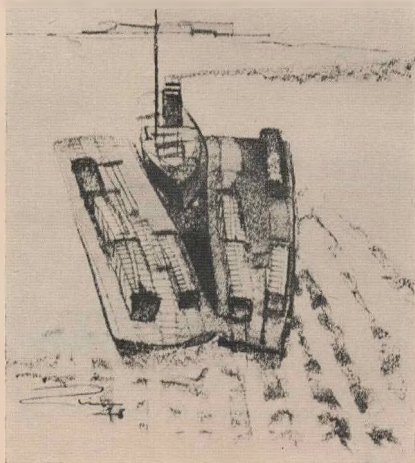
It is good to shun alibis which blame nature for our failures in the evolution of great seaports. It can be shown in just this department of human endeavour that man-made construction and planned circumstances can often prevail.

In some cases they do prevail to such an amazing degree and at such fantastic scale, as in Santos, which now, quite unexpected by an earlier generation, contests the traffic volume and rank of Buenos Aires.

Almost like Hongkong or Singapore, Santos is situated on an island; like the above-described Rio, it seems naturally cut off by a coastal mountain bank, a divide, and a bluff of several thousand feet height, from an interior that with all its water streams used to turn its face away from the coast and toward the large river of the west.

It seemed by no means a promising situation or physiography for a world harbour, but the unique reversing of water ways on the high plateau, the construction of a system of artificial lakes to head a series of great hydro-electric plants down coastward, has, in a few well planned years, transformed the entire region of harbour and hinterland into one of highest industrial potential, into a region with import needs that match its huge and bulky export possibilities. From a one-outward-cargo harbour, Santos has now quickly grown to a most diversified receiver as well.

Considering such gigantic successes of modern technological ingenuity, the mere systematic perfection of what too long has been called "port terminal operations" seems encouragingly less difficult.



TUG WITH TWO FLOATING SIDINGS: The freight bagged, crated and palletted uniformly, to turn cargo with ease, the huge containers, of which two or three make up the load of a truck trailer, or the flowing type of bulk, like oil grain or coke, unloaded, handled, transported, stored and warehoused—all this together with the size and type of carrier from which and to which goods are transferred, be it a freight plane or a specialised long distance hauling truck—are the basic subject of technical port design. Handling larger units, tugging a couple of rafts each with a dozen box cars on a floating siding gives more efficiency than to negotiate movement piecemeal and in petty quanta.

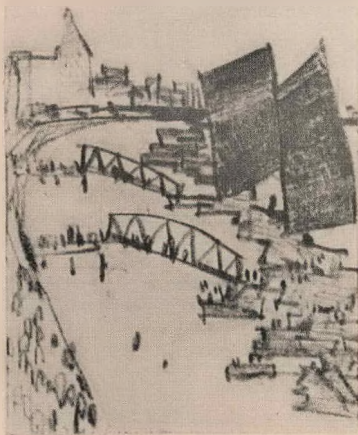
TRANSFER NOT TERMINAL

The fundamental attitude here must be Transfer not Terminal; co-ordinated, continuous flow fits modern mass transactions best, and there is no static ending to them anywhere.

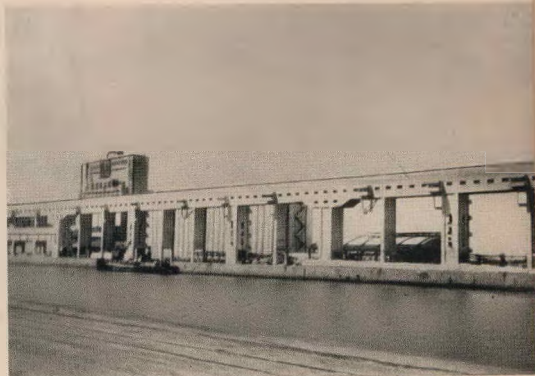
Air transfers may offer a cluster of difficulties to the designer and may be shrouded in uncertainties, but they are simpler to deal with than seaports, because they happen to have no ancestry or precedent cumbersome to consider and to drag along. But in spite of all "traditions," historical hangovers and the reactionary routine of the last century or the last decade, if we compare the task here on hand with those grand scale feats cited above, it should no longer be called a dream if we think of transforming some of the globe's bottlenecks into the key transfers they ought to be, and to reform hectic Rush City, so that on one hand it ticks in good rhythmic order, and, on the other, offers human satisfaction apart from its working efficiencies.

SEAPORT ALSO A HUMAN COMMUNITY

A seaport constitutes a link in a vastly extended national and global machine, but it also constitutes a community, with human requirements and contemporary living standards.



"BUND" AND "GO DOWNS" IN SHANGHAI: But port work, even with all improvement, is never so mechanized that it does not depend on human beings to get things going, and ports may have had their glitter and soaring incomes, but they also have too often been known for debasement of humanity, moral and physical filth, pitiful accommodation for men and families, centres of bodily exploitation and spread of disease. The great metropolitan erstwhile treaty port of Shanghai used to boast its "bund" and numerous "go downs" where starving coolies, with many voiced sing-song, carried back-breaking loads, only to gain a handful of rice and to sleep in any dirty alley.



THE BRAND NEW GERMAN BUILT AND NEVER USED GRAIN ELEVATORS OF BUENOS AIRES, PUERTO NUEVO are an example of the need for world-wide standardized and interchangeable technique and equipment. The German contracting firms have disappeared in the pit of World War II, and no other equipment but theirs fits the extensive structure, now idling.

A port has to be considered as to the ultimate capacity it will have, when all its natural potential is fully realised by resourceful engineering in keeping with the economic possibilities of the region served. Then, once this ultimate but clearly limited capacity—the number of ships berthed, the tonnage and kind of goods to be transacted—is as well established as possible, a refined quantitative analysis must be made, and not merely as to trackage of classification yards, floor footage of warehousing, size of graving docks, and facilities for voyage repairs! Human elements must be recognised and computed: the numbers of stevedoring personnel, on the basis of distinctly contemplated mechanical equipment, and beyond this, the entire human crew, from pier guards to fire fighters, cargo checkers, skilled mechanics and maintenance men, from steamship agents and pilots to time keepers, railroad employees, and switchboard girls, who all will have to serve this transfer. Finally the total population tributary to it, in terms of families, children, adolescents, adults, and oldsters will have to be accommodated. All will live nearby and in articulated residential neighbourhoods of easy commuting distance.

To design a port in this sense means indeed apportioning lanes and transit storage or parking for highly diversified traffic, but it also means calculating and pleasantly supplying the required number of grade school classrooms, day care centres, kindergartens, health substations, transient hotel rooms, less transient apartments, and garaging, above all, of stable homes, and the various recreational and auxiliary amenities, which paleotechnic exploiters always seemed to forget but which modern people insist on. Convenient local shopping; lunch



"SAMPANS" FLOATING HOUSING IN FAR EASTERN PORTS: Many thousands of longshoremen in Singapore, like in Kanton, must lodge their families in house boats, the watery counterpart of our emergency living on wheels and in trailers, which has the same tendency to turn permanent. The "Sampans" -prows have big eyes painted on to look into the traffic jam and avoid the ghosts of accident.

hours, evenings and week-ends spent in wholesome recreation, call for provisions in the plan, as well as properly laid-out industrial zones, and practically connected subdivisions for such light manufacturing which will logically congregate about the port.

To the oldtimer, anyone running "the full gamut of implications" of the thus understood seaport planning problem, may seem a strange enough sight. Still, in reality, none of the techniques brought into play from crating, palleting, lifting, moving, leading, storing—of freight that turns cargo—to the six lane truck speedway under the elevated monorail rapid transit, which reaches the metropolitan centre, to the airfields or to the parkways that skirt peaceful, human scale residential zones—truly none of all these technical measures will bring wholesome results without a well balanced integration.

ARCHITECTS AND PLANNERS

Among a host of specialized technical experts, the architect will keep his place if he is skilled to evaluate the human motor behind all the machinery and is intent on avoiding its exhaustion by ponderable and, often enough, by subtle imponderable means.

The new plans must be laid under a heading of "harnessed, not worshipped materialism." Or perhaps grand old "materialism," a fashion of the earlier nineteenth century, will altogether be recognized as just a historical trend of speculation and philosophy unfit for our day, as, for instance, bygone

medieval scholasticism! At any rate, mechanical drudge proofing, of which the wharf and transit shed still need so heavy a dose, must by no means degenerate into an overall mechanistic attitude of planning a seaport community or into letting the more profound essentials "just happen"—unplanned and uncared for.

CO-OPERATION OF AGENCIES

Port authorities, harbour commissions, steamship and railroad companies, as well as the stevedoring contractors and the manufacturers of their ingenious mechanical equipment, all have accomplished remarkable things, and harbour construction firms, such as Frederick Snavely in Callao and Matarani, Peru, or Cartagena, Columbia, have, like the Division of Docks and Yards, spread our rational, practical approach to foreign shores. But to achieve that desired broader integration of which we spoke above, a close co-operation of many agencies is needed.

When chairman of the California State Planning Board and visiting for mutual information with local commissions, I was often enough astounded to find that the members of a harbour board would never meet with the city planning commission or the park or school boards; they would not know one member of those other civilian policy making bodies, nor have their executive officers mutually follow each other's work, or pay attention to the plans of, say, the local Housing Authority. Calling them all together into one hall, into joint meetings, inviting and effecting a regional combine of neighbouring com-

Typical docks 750 feet wide, all electric supply lines underground, with high-line double-tracks along 50 foot wharf apron, fluorescently illuminated free span transit sheds, 120 and 200 feet deep, windowless, where intended for around the clock operations lower initial maintenance cost; ample overpaved low line trackage between sheds and truck loading-dock space wherever feasible, detached. Warehousing largely and on principle removed from harbour to "consumer's ends" of metropolitan region. Port-maintained heavy equipment, such as portal cranes, coal and coke loading equipment, grain elevators, for specialised purposes and berths; near docks "gear central" provided for stevedoring contract companies, with ample free wheeling equipment, dock-trains, lift-up trucks, staking trucks, movable conveyors, high stilled "lumber spiders" or Ross-carriers.

Lumber import and storage area. (Lumber export harbours with timber pool and portside saw mills require special planning also in relation to inland water ways.)

Lighthouse promontory
drive and rail paths leading
toward town centre, and to
line beaches on North Shore.

General freight-air field for inland distribution and collection of speed freight. Warehouses leased to companies operating their own air-carrier fleets. Dock trains drive wharf aprons; rail trackage to connect directly with low and high lines of cargo piers.

Repair docks West, oil harbour East (with pipe line to refinery); centrifugal pumps load a tanker in six or eight hours, 10,000 bar-gees motor to slips and re-fuel-ships during stevedoring operations.

Sea plane base and entry to "extension basin" with such portside industries which depend on immediate water frontage or large areas, or which are obnoxious by exhalations, odours, dust, fish canning, oil refining, brass, potash plants, etc.—and fabrication for overseas export of packaged housing, crated unassembled motor cars.

Intermediate warehousing facilities placed accessible to a system of railway sidings and freight trailer-packing ribbons, directly backed up to three foot low loading platforms, fifty foot truck drives in front, conveyor served helicopter roof loading docks, etc.

Employee's parking and landscaped lunch recreation area with garden-porch-canteens, health and comfort stations, reading rooms, game facilities, all accessible to industrial operators, shore- and ships' crews. Lunch time-crap-shooting of ingghoremen between rail tracks eliminated.

Port side light and subsidiary manufacturing (smaller establishments without need of immediate water frontage), accessible to dock trains and freight jitneys directly from shipside by a system of under- or over-passes.

Beaches which make North Shore resorts the week-end and holiday areas of the port people and the metropolitan region, are segregated as well as possible from port traffic on land and sea.

Port shipping centre slightly elevated, with central underground parking facilities above high tide-line, and peripheral multi-storey garage zone adjacent.

Residential neighbourhoods with belt roads and stub-end service drives, a pedestrian green core to each neighborhood, with communal recreation grounds and desirable facilities from health sub-stations to branch libraries, day care centres for children, kindergartens and grade schools.

Six lane parkway, passing passenger air-transfer east and leading within 1,000 feet landscaped strip, partly between residential neighbourhoods and partly along heavy industrial development and extension zones to metropolitan centre area. "Rush City Reformed."

Trucking super boulevard, straddling Rapid Transit to city, paralleled by Port operated electrified railway-belt line, which connects all industrial zones of "Rush City Reformed."

Hotels and transient apartments at conflux of residential commuters' area, near terminal of Municipal Rapid Transit to city, central helicopter park and adjacent country club area on the north eastern rolling hills. Seamen's and port hospital on 30-acre plot in wooded area, east north east.

"The Quay." Town water front with ferry and suburban-land commutation wharfs; buildings of port administration, marine exchange, radar and radio operation, port police guard—headquarters, post office, etc.

Passenger docks for several transoceanic lines with two-storey transit sheds, passenger gallery and portal supported "gang planks" or embarking bridges, rolling past berths on wide water front tracks.

A planned port will set a new keynote, overcoming the endless drabness of material exploitation, the mere striving for technical efficacy and the debasement of humanity near an important working place. We try to find even a quicker "way out of Manchester," than to get drunk like a piglet—and it will be a more over-all, wholesome way, too.

munities and of the corresponding county commissions, seemed to me the most deserving scheme.

A port has a region behind it, and, as in New York, it may well be a "Port of many ports," instead of one colossally overgrown harbour, like Hamburg. In spite of all the difficulty of unifying administration—the fact that "the port of New York" really means Manhattan, Newark, Kearny, Jersey City, Bayoune, Raritan, Elizabeth, Weehawken, Edgewater, Hoboken, Staten Island, Bronx, Brooklyn, and what not—the aim should be salubrious decentralization, in keeping with a trend towards articulation and distribution of technical facilities, instead of thoughtlessly going on and congesting them to amorphous unlimited gigantism.

OPENING OF THE WORLD BY SPREAD OF FACILITIES

In newly developing regions truckroads and airfields will be quicker and more easily built than trunklines and railroads used to be, and thus Land-Sea transfer may be multiplied and distributed rather than made to grow in single spots beyond possible control. Still, the world is generally not opened up in keeping with our contemporary technological potential for decentralization and not yet fully cognizant of it.

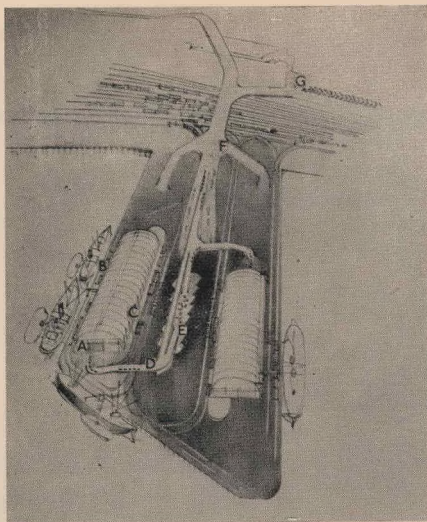
In past periods, not, as ours, endowed with the technical means of virtually limitless multiplication, human scale was more or less naturally preserved. There was no seaport where forlorn strangers walking about would be frustrated by never catching even so much as a glimpse of waterfront and vessels. Standing under Galeazzo Alessi's Porta Marina, anyone could overlook Genoese shipping in one sweep. The best architect of the Republic had chosen the spot and made the layout.

PRIDE OF COMMUNITY

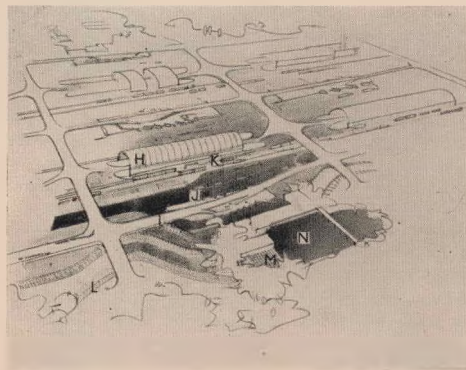
In those past periods the economic activities had been more clear to all, more conspicuously over the table—in fact they were the pride and exhibit of a community. The jewellers'-and goldsmiths'-street, the potters' hops in a medieval or any oriental town, the glassmaking of Murano-Venice, all the industrious occupations of a place were quite centrally located and comprehensible to the eye, whether in Cairo, in Canton or in Nuremberg, and quite similarly the seaport with its foreign ships, big and small, was something to look at, to appraise in a glance, and to be proud of—in Antwerp, Basra, Valencia, Marseilles, or Lubeck.

When, however, the real mass handling started in the Victorian age, dry exploitation of space, material, and, above all, of human beings took not only to a bewildering scale, but also to a manner not in keeping with official moral concepts, and the industrial activities were generally banished out of sight and, as well as possible, relegated to ever new mistreated outskirts or sacrificed "faubourge," as the down-town Parisians would call it.

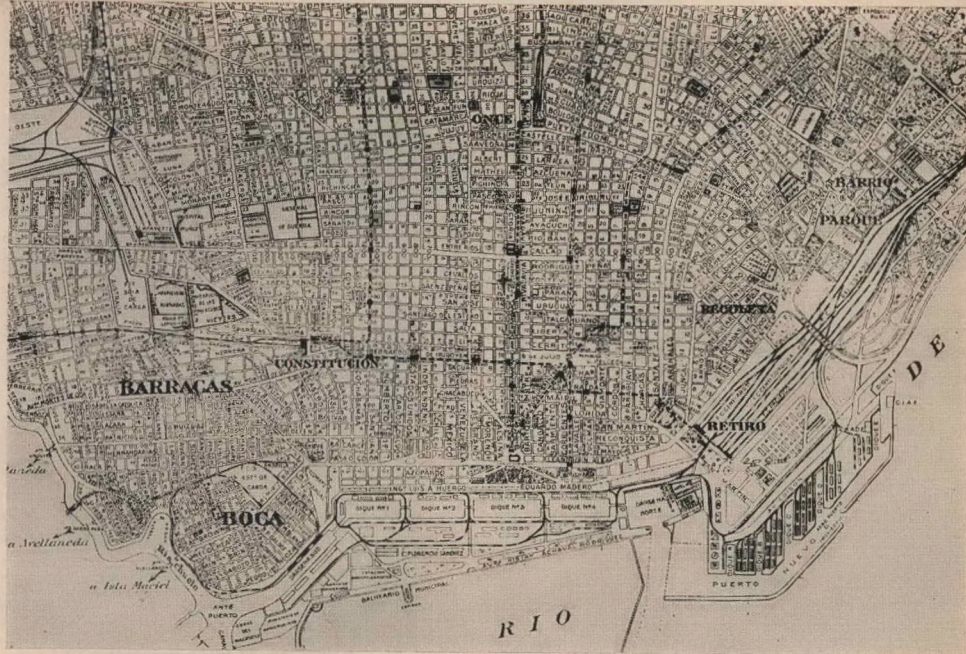
However, this process of pushing the new technified activities about in the community, as a bastard step-child, was, in the case of the seaport, on purely geographical grounds, not



SCHEMATIC SKETCH OF PIER: With (A) 200 feet free span sheds and continuous broadside door arrangements both to (B) 50 feet wharf aprons and to (C) 15 foot loading platforms at lowlines. Dock trains cross overhead (D) to specialized truck trailer loading dock (E); and all rubber tire traffic reaches level free (F) over rail sidings and classification yards to trailer parks (G). Barbed vessels may break out cargo both on to wharfs and lighters, or fuel from barges simultaneously in ample slips.



SCHEMATIC SKETCH PORTSIDE LIGHT INDUSTRIES: Can not all have and do not all need immediate water frontage; but they call for a new type of subdivision and segregated traffic provisions: (H) wideopen, unobstructed plant structures for mass handling, need a continuous raw material approach, by rail, over-the-road-truck-trailer, and dock train from shipside; finished products may leave by the same three types of carriers, and thus also reach the air freight terminal. (I) Rubber wheel traction elevated. (J) Truck trailer loading docks without interference with box cars spotted at lowlines (K). (L) Parking lots of workman and employeas. (M) Lunch canteens, and (N) recreational green area, play field, health substation, etc.



PORT OF BUENOS AIRES: From the "Boca," with her Genoese fisherman, to the newly filled-up and well-landscaped shore park area at Barrio Parque, the Buenos Aires "Diques" and new harbour stretch intimately at the front lawn of a capital metropolis, with the Plaza de Mayo, the President's pink palace, the Plaza San Martin right facing the ships. Extension is only possible into the waters of La Plata River. There is pleasant tidiness about this great southern port, and administrative skill and ambition for a representational setting is evident.



HAMBURG: A bewildering maze and multitude of slips and wharves along the "Northern Elbe," detached from the cleanliness and good spirits of the more human city, this was Port Hamburg before the bombings. It is interesting to watch for its remaking in a new vein.

so easy. The waterfront was here and simply could not be pushed away. It could be developed, though, to be humanly bearable, according to an integrated plan, according to a feeling of the oneness of life—in and out of working hours—or it could be publicly and grossly exploited, humanly neglected, as a depressing man-made fringe of desert.

BEAUTY OF PORTS

But in fact harbours, as in some classical examples, can also to-day be more attractive than railroad stations and airfields. While ships, picturesque, old-fashioned, or modern, are not and will not be as fast as streamliner trains and jet propelled planes, they are really more pleasant in their motions, arrivals and departures for anyone watching them from a cafe terrace, and they are less noisy.

In Montevideo the city administration has recently built just such a noise-removed cafe restaurant on the slope of the lighthouse hill, with the old fort crowning it and the frogs croaking peacefully in the moat. The view over the harbour is the loveliest sight in town and points the way to esthetic considerations in any new or to-be-improved port.

Arrivals and departures should be pleasant memories, not only for the onlooker, but also for a directly concerned stranger, but as it is, they are too often memories of drab confusion, of psychological fatigue, of physical discomfort, and with no opportunity for the traveller or visitor to master and integrate his first impressions. The mere task of orientation, of finding a place, a particular office, a transit shed, a ferry—and reaching it unexhausted—should in itself be a consideration for suitable design.

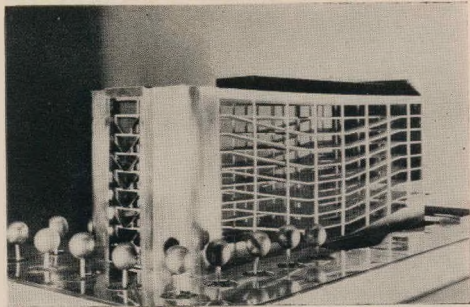
WORLD-WIDE UNIFICATION

In many respects a seaport is a most significant example of to-day's planning problematics. In general Land-Sea Transfer, or what used to be called "terminal operation," is becoming a scientifically systematic technique, which should lead to world wide, broadly acceptable principles and standards, just as air transfers and airfields also tend toward unification all over the earth. Our technological civilization is at bottom cosmopolitan in its trends, and port designers must here be leaders and pathfinders.

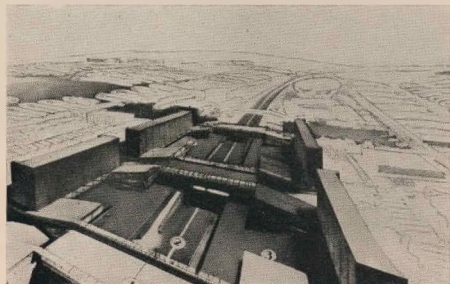
Of course, we know that a pleasing harmonization and the so practical shrinkage of the globe is painfully obstructed by economic contrasts and training discrepancies. Widely divergent wage scales and labour supply will engender equally divergent methods and pose difficulties in finding an equitable and common denominator for a peaceful world civilization.

Sea-Land and Air transfers show up this transition difficultly in brightest relief; but they also may become crystallization points for tuning a modern world together. Provincialism *per se* will finally have to wither in the face of global needs.

Too many new features and considerations to be ignored have, on a broad front, entered the field since the pure railroad age created its harbours. There is tailgate loading of trucks;



MULTI-STORY PARKING GARAGE, NEUTRA, ARCHITECT: Passenger cars, like all other vehicles and carriers, will accumulate in large numbers about a port. Provisions for them should be no afterthought, and horizontal ecreage may in some cases not suffice.



FREE WAYS WITH LEVEL FREE CROSSINGS and commercial centres placed between residential neighbourhoods will connect the harbour area with the other sectors of the metropolitan region; by their accompanying zones of landscaping these arteries will wholesomely articulate the vastness to which modern communities tend. Neutra, Architect.



PORT SIDE NEIGHBOURHOOD, NEUTRA, ARCHITECT: Housing projects at seaports are often greatly benefitted by lovely, sometimes panoramic outlooks over sea or harbour; fresh air is obtainable more than in other locations.

there is the cab-over-engine tractor, which has transformed the waiting truck driver into a busy man, spotting and picking up big trailers, and there is the dock-train tractor pulling and depositing here and there miniature and not track bound freight trains, up to twelve small low units, always independent and ready for new hauls, slipping through side ports on ship, rolling along its decks, as on the floors of transit sheds, of warehouses and in the wide span hall of " portside " industries, which now can really be a mile off the waterfront. Docktrains may rise on ramps, reach overhead boxcars and special truck loading docks, and feed gravity conveyors and chutes down to them. There is the lift truck, nimbly wheeling and working in boxcars, a carrier, entering the inside of another carrier.

A nation-wide, perhaps a world-wide regulation and wholesome standardization of means and methods, above all, of ship length, berth-length, as well as general length— and cross dimensioning of piers, of course, with all due consideration to special cases and particular requirements, may ultimately be anticipated, as well as the dimensional standardization of cubage for crates, pallets, containers, in rational relation to dock- and truck-trailers, and modernized boxcars, to customary lifting and traction equipment, as well as to berthing space and stacking height. Optimum elementary units established first, lead naturally to a design in multiples of such a module, which will have to find approval of the maritime commission and last but not least of the practical operators, the steamship, trucking, and railroad people, whom port administrators should mobilize as voting consultants, before architects' and engineers' proposals are given the go signal. Vessels will then not have to be shifted ahead and astern, holds will always coincide with shed doors, and the entire longitudinal and transversal pier traffic pattern will achieve the needed integration and harmony.

HAND OPERATION STANDARDS FADING

In certain Asiatic and African ports, natives are still ready to dive three minutes for a nickel, and their diminutive wages keep out more rational and more human methods.

But also in these United States, if we analyze it correctly, long past pay scales, and in keeping with it, hand operation in breaking out and moving cargo, once upon a time established a great deal of our still existing pier layouts, for example, practical cross dimensions of transit sheds. Now, the fact that inadequacy of equipment and layout to suit it means that there will be congestion-crippled ports and that terminal operation, as it is, may run as costly as the entire water transport, calls for measures which cannot well be too far reaching.

The limitations and considerations of the two-wheel hand truck are increasingly void for a design of the future, while, as a counter-example, walking distances in a dwelling neighbourhood are still, and always will remain a very valid and human argument ! In our case, humanization means something different. The motorized lift truck, revolutionary and prolific in the transit sheds of modern ports, is in fact the most human and benevolent appearance one can wish to observe,

Back-breaking jobs—at an earlier day impossible ones—for instance, to stack high up to capacity of clearance—twenty feet and beyond—now becomes a simple feat, pleasurable to look at. And the lift truck swishing up to three tons five hundred feet a minute, has proven its right to layout provisions of its own and different from those of a hand contraption that moves five hundred pounds at a pace of hundred minute feet, even though in some cases it gives fine service.

UNIT VOLUMES OF CARGO

Elemental particles of elemental dimensions, atoms, have long appeared to govern the entire world structure. Modern physics has recognized that not only matter but also energy can not be chopped up or chewed down ad infinitum, but there are basic " quanta " to be handled in all calculations, which lead to any sort of understanding of design. We need a sort of minimum quanta theory of cargo handling, so to speak. Unit volumes, unit loads, unit energy exertions, which the mechanized stevedore, the railroad man, the truck driver, who picks up properly manoeuvrable trailers, find optimum common denominators for their operation and must be recognized by the producer, by the crating designer, the makers of containers and pallets; and thus also the stowing on deck and in ships' holds may become unified accordingly, and less of a puzzle.

The containers may turn out to be expendable and thrown away in one case, or stabilized and re-usable in the other; they may be weatherproof and obviate the protection of transit sheds; still they may fit into a modular system of volume and have those unified handling features of allowing the tines of a fork truck under the load. Or perhaps the overhead handling gear or crane will have its comeback, for the more colossal of these holders of goods.

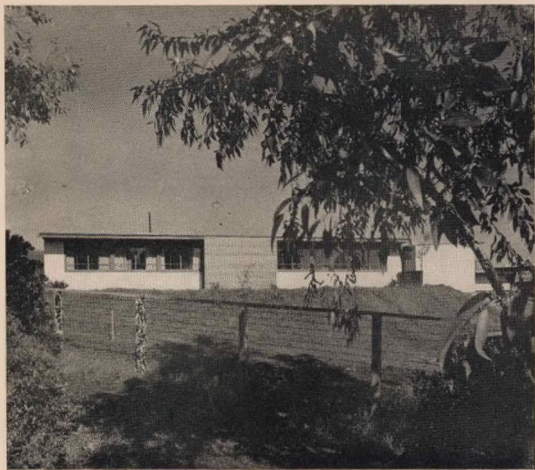
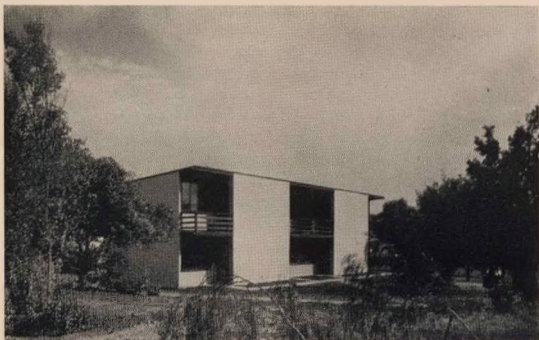
PIER TRAFFIC AUTOMATICALLY TO REACH PORTSIDE INDUSTRIES

One consideration will be that light portside industries may, by proper provisions, partake in the immediate benefits of free wheeling mechanical stevedoring and port traction equipment without themselves being directly forced onto the precious and, by its nature, restricted waterfront itself. The over-the-road truck and its gigantic trailers may perhaps here, in many cases, be eliminated and relegated to serve more distant points of destination.

When standardization in multiples of unified volume quanta will make for highly simplified stowage plans, automatism versus ever strained management will have achieved a great step forward with the adoption of such systematics. First, as we said, the basic " quanta " handled in appropriate containers will naturally come to govern all physical facilities to serve stevedoring routine. Then, the paths which these elemental particles must travel, the routes of their carriers within sheds, outside on wharfs and along the inner lines of piers and quays could stand better segregation and should be helped along by it. Their continuous flow would greatly profit from elimination of all possible mutual interference.



CHANNEL HEIGHTS HOUSING PROJECT, NEUTRA. ARCHITECT: Channel Heights housing project, built for the Housing Authority of Los Angeles, Howard Holtzendorff, executive, L. S. Wilson, consultant, takes all possible advantage of the promontorial ground configuration of the Palos Verdes Peninsula. The living quarters of every dwelling face down to the Pacific. All communal facilities and local market and trading centre were part of architect's planning work.



TWO STOREY ROW HOUSE, ONE STOREY DOUBLE HOUSE FOR PORT LABOUR IN GREEN SETTING. NEUTRA, ARCHITECT: Two storey row houses and ground floor double houses serve the families of longshoremen, chandlers and shipyard workers, who, in their spare time, grow their own vegetables and flower gardens.

Circular routes are generally the correlate of such a continuous flow. In principle the design must establish them, and they must be made elastically possible in many a practical detail case. Almost continuous door opening along all shed fronts is a vital point in this desirable flexibility.

CROSS TRAFFIC

Free wheeling mechanical equipment should, ideally, have its opportunity for level, free cross-over from pier front to pier front, from shed to shed, from trucking dock to ship side or to nearby industrial establishments. Power operated bridges are a solution that takes time and energy. They are far from automatic. Two level traffic systems, with easy ascent and descent ramps, may in some cases pay for themselves. Seven per cent. grades are recommended for loaded fork truck or dock tractors pulling its train of trailers.

In a time of air freight on the increase for less bulky quality goods, sea cargo may become more uniformly of the bulkiest kind, and unprecedented mass transactions will dominate the pier and port scene.

RE-DESIGN FOR MASS FLOW

The feeling that this cannot fail to occur and that existing facilities are of inveterate insufficiency, has made pier re-design a favourite subject, and all attitudes perment and converge into it, from irresponsible enthusiasm without budgetary base, to sour reactionism, which on principle throws wet blankets over "those new fangled ideas." However, if these postwar days of world wide port construction and reconstruction will not warm us up to truly new plans, grandly adjusted to a singular opportunity of rejuvenation, then we may not live to see a similar chance occur again, until indeed atomic bombs are being scattered.

Le Havre is now in rubble, like Hamburg; Naples, Marseilles, Kobe, Manila are war casualties; and places like Santos, Galveston, Long Beach are bound to move up several notches at a time, so that profoundly new starts, not only piecemeal improvements, are going to happen under our eyes. It is probably an unprecedented moment in the history of port renewal and planning.

And so a picturesque variety of suggestions are at hand. But naturally, all proposals and novelties ought to be tempered with the practical know-how of experienced waterfront men. The bold and original, as P. R. Shoemaker, chief harbour engineer of Long Beach, says, must be merged with the conservatism of tested routine.

One wonders whether, apart from a few mass immigration ports and pleasure cruising, steamship passenger disembarking facilities will be over-taxed, as undoubtedly will be cargo provisions. However, to cut interference on the cargo handling level and give safety and comfort to the passenger, specific designs are well foreshadowed and will undoubtedly amortize.



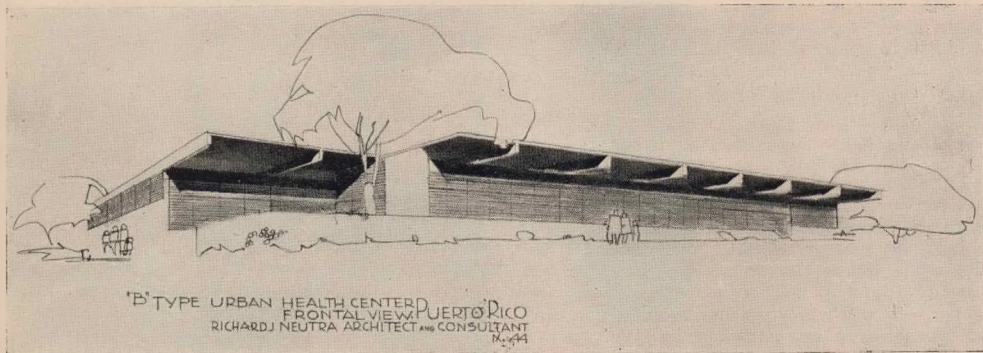
GRADE SCHOOL IN GREEN SETTING, NEUTRA, ARCHITECT: Modern grade schools and kindergartens are a need of the new living neighbourhoods to be developed within walking or easy commuting distance of the harbour.

Such a cargo-passenger "terminal" provides a one story type shed structure, with a shipside mezzanine-passenger-corridor. This again connects to shipdeck by means of an electrically operated, automatically adjustable travelling landing stage, gangplank, and platform for the handling of baggage. Baggage inspection, etc., is also placed on the upper level. There is cross connection, above the cargo ground floor, to landside and to the elevator, which lowers passengers and their baggage to street level, taxicabs and auto park. Accident risks are here, as always, best minimized by suitable segregation of traffic.

MORE SPACE AND OPENINGS

Apart from a diversity of specialties, stands the grand principle of allotting more unobstructed and elastic space to aprons, to dock stowage and transit sheds, to railway cars, to over-the-road trailers, backed up onto loading platforms or onto special docks of their own, neatly removed from the carriers on tracks.

The opinion grows that a wharf of 50 feet may be very superior to one of 32, in allowing track passage to neighbouring berths or to spot boxcars and truck trailers under the hook, opposite the holds of each ship. Free span sheds of 200 feet width and more, and practically continuous front doors, working upward, somewhat like in the new Long Beach proposal,



A health centre must serve even a small port, and health sub-stations must be well distributed over the working areas of the harbour as over the residential neighbourhoods. Health Department, Harbour Commissioners and Metropolitan Housing Authority work hand in glove.

became more frequently constituent parts of pier design—end doors may take on new significance when docktrains begin to serve segregated truck loading docks.

LIGHT AROUND THE CLOCK

Industrial engineers have for the manufacturing and production field increased, even almost doubled the output, while cutting the accident rate, by proper and well-distributed, shadowless illumination. But they have also recognized that daylight hardly ever does the trick economically or satisfactorily, and that modern mass operations utilize expensive facilities best by a continuous sequence of working shifts. Once general and well localized night lighting must be installed, it may perhaps best serve around the clock. Weatherproof flashing and glass, first-cost and maintenance may be forgotten together with the more complicated structural features to provide for daylight influx.

EASING OF WORK

Managerial supervision from an upper level, with a cat-walk-network, with loudspeakers and inter-communicating microphone connections, engage the imagination of designers. Paper work should be shot from office to office through a system of pneumatic tubes, instead of cluttering the place with runners and messengers, like highroads of the Persian king. Finally, there may even be exhilarating music broadcast over the docks, a late and more accomplished substitute for the coolies' sing-song on the go-downs of Shanghai, which, as I noticed, sweetened a bit and eased so much hard and sweated work,

FUNDAMENTALS

But more important than all gadgets and trimmings is the substructure itself. Concentrated—and impact loads on the pier deck may be on the increase, and solid level and mildly ramped, non-skid floors, with tracks always over-paved, and with lane width and curve radii provided for the manoeuvring of dock trains and heaviest truck trailers, will become characteristic, not only for pier design, but for the layout of the entire warehousing and port side industrial area.

PORTSIDE MANUFACTURES

Portside industries may, of course, be of a great diversity and vary profoundly from one geographical location to the other. Their access in many cases of lighter production and operation may, as we hinted, not have to be directly at shipside and waterfront, but rather to the mechanical lifting and moving equipment of the wharf, so that it does not become necessary to employ several intermediate carriers.

Granted then, that light manufacturing of a mass output is the typical industry at immediate portside, shop fabrication for large quantity housing may perhaps serve us as example.

It may need raw material approach by truck, by rail and water of several hundred thousand board feet of lumber a day, and perhaps twice as many feet of panel board, plywood, etc., to produce the elements of a thousand houses a month. The finished panel elements will go off the plant on the other end of a hall of say 300 feet width by 1,000 or even 1,500 feet lengths,

NON-STOP FLOW

The mechanization of a continuously running production, the suitable assembly line, will, of course, be very diversified for different products, but there is, in most cases, the same character of a non-stop flow through whatever external transport carrier to the internal carriers within a hall of extraordinary dimensions.

For illustration, prefabricators like "General Panels" would require inflow of lumber into kilns, and from there to saws, cross cutting, length cutting, moulding, electronic gluing, all while in motion.

At another entry 300,000 square feet of panel board material will proceed each day through two other types of saws, converge with the first stream of prepared items, between a parallel number of jigs and glue presses.

The now structurally finished panels, into which insulation has been inserted, will move through spray-paint and drying

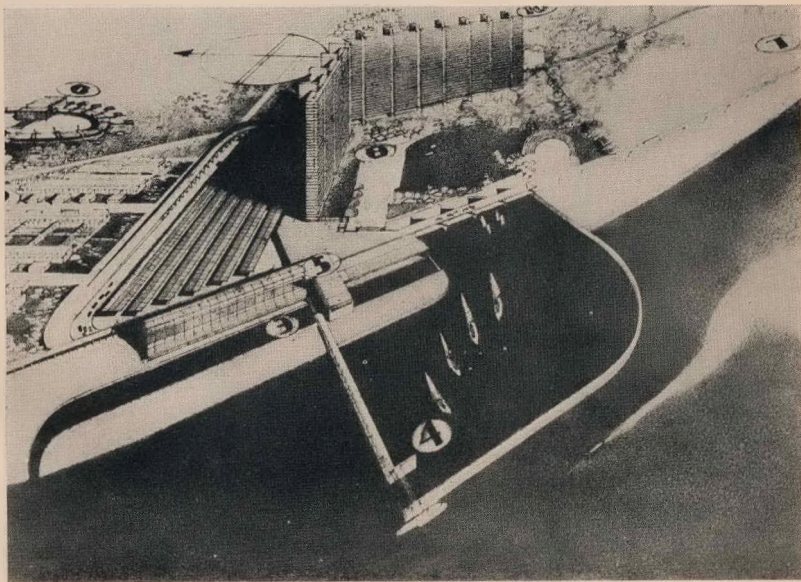
chambers, meet with a mixed third stream of articles, such as doors, windows, glass, conduits, hardware, etc., in the final assembly room, from where with just a minimum of intermediate storage the elements of 35 dwelling units per day, which means a one thousand lot per month, will board trucks, trailers and boxcars for land destination, or dock trains to reach ship hold at nearby berths.

No belt conveyor can interrupt action, no truck or docktrain can overpark its time at the loading platform, no ship must be berthed longer than pre-allocated—or all the facilities and their time capacities, as well as the required spaces appear at once dimensionally out of gear.

SUBDIVISION WITH LEVEL FREE CIRCUMFLUX OF EACH INDUSTRIAL PLOT

A new type of subdivision for light industrial zones is needed, providing for circumflux of diversified traffic with level free intersections on one hand, and on the other for employees park-

SUBURBAN HOLIDAY BEACH FOR THE PEOPLE. NEUTRA, ARCHITECT, is segregated as well as possible from port traffic on land and sea, but it serves the port population and the entire region with its sail sport shore amusement park, bathing establishments, yacht harbour, vacation housing, and summer schools.



ing and for intermissional recreation areas to serve operators at lunch hours, etc.

The bewildering contrast between an amorphously stretching desert of technico-commercial activities and far distant residential areas which alone are allowed to have human aspirations, is not the only and certainly not the most truly productive or timely approach to a contemporary order of things. The solution must become well-rounded and more equitable.

IN CONCLUSION

Technical perfection in quasi automatic harbour facilities concerned with an almost continuous flow of goods, based on

and helped by the rational unification of containers and cargo elements—is, after all, only one line of progress for a coastal transfer. The comfort of the numerous human beings who spend their working lives on and about the docks, of travellers and ships' crews, of the labour employed by port side manufacture, of a concentrated shore population at large—call for a more circumspect, a further reaching, a more wholesome design and for a planfully integrated layout, so as to make a truly living entity out of the far-flung installations, the tributary industrial, commercial and dwelling areas that cluster around the modern mass transfer of a seaport.

STUDENT'S FORUM

OCTOBER 1946

CONTENTS

DESIGN OF THE MONTH

THE HISTORIC BUILDINGS OF JOHANNESBURG CUTHBERT'S BUILDINGS

DESIGN OF THE MONTH

BOOKING OFFICE FOR AN INTERNATIONAL AIRWAYS COMPANY

S. A. ABRAMOWITCH, B. Arch. V.



This solution to the problem of air-line office design was controlled by two main factors.

The first was the desire to eliminate external advertising and instead to open up the interior as a dramatic display for selling air travel. To achieve this, the plan was split into two main volumes and much thought was given to their decoration.

The first, the public space, has offices located on the one street side, a small waiting space and a long counter running almost its entire length. On the opposite wall, a mural comprising posters, sloped to aid visibility, was placed in the centre over a built-in settee. The rest of the wall has strips of tubular lighting running up its full height concealed by an overall system of fixed louvres rather like a Venetian blind giving the surface a soft luminous glow. The colours in this volume are pale blue deep maroon, white and pale green.

STUDENT EDITOR
S. A. ABRAMOWITCH

The other large space is for passengers awaiting transport to the airfield. The treatment here is rather subdued, with the point of interest being a large floor-to-ceiling mural on a concave background resting in a pond of water. The mural itself comprises a map of the world, capped by a quotation from Shakespeare, while just in front is a pedestal displaying one of the company's air-liners. The colour scheme of this area is composed of grey walls and floor, large areas of maroon

curtaining framed in white and a pale blue ceiling. The upholstery to cream furniture is a blue-green with a pale cream carpet on the floor of the main sitting space.

The second factor which influences the design of air-line offices is the problem of baggage. This was solved by placing the baggage space to one side with direct access from the street and bus bay while the handling area is screened to hide unsightly stacks of suit-cases from public view.

THE HISTORIC BUILDINGS OF JOHANNESBURG - 4

CUTHBERT'S BUILDINGS

By Cyril A. Stoloff, Dip. Arch. III

A particularly colourful aspect of the early architecture of Johannesburg is that of the departmental store, and of shops specialising in clothing and footwear.

In the late 19th century, Eloff and Pritchard Streets were two of the leading thoroughfares, being the chief arteries from the suburbs to the business quarters. In these streets most of the leading drapery, out-fitting and shoe shops were established, including such well-known firms as Markham's, Store Brothers, Stuart Gunning, Elliot and Jones, and Cuthbert's. In 1905 it was maintained that these establishments were "in every way equal, both in the smartness of their wares and the manner of their display, to those of London, Paris or Vienna."

Early Johannesburg shops were usually small double storey affairs, such as Henwood's Building in 1886, but Cuthbert's Building (corner Eloff and Pritchard Streets) was among the first to be erected on such a large scale.

The building, with characteristic iron pillars and railings on the first floor balcony, consists of the ground floor shoe-store, first floor restaurant, and upper floors of professional suites. There is a vast amount of varying decorative motifs, the whole being dominated by the projecting cornice and octagonal roof tower.

Cuthbert's Building is well known as the home of the original "Balcony Tea Rooms" (later "Corner Lounge"). The large balcony, one of the great attractions of the café, was always thronged with visitors, who were able, from this point of vantage, to watch the busy crowds in Eloff Street.

In 1904, it was recorded that "the tea rooms have been fitted up with the most exquisite taste, the appointments being very beautiful. The cuisine is excellent, and the staff well organised. Every evening a string band discourses the



most popular music, and the refreshments are served in the daintiest style. These factors have combined to make this the most delightful resort of its kind in Johannesburg."

CONTEMPORARY JOURNALS

"THE ARCHITECTURAL REVIEW," July, 1946.

"The Progeny of St. Martin in the Fields," by Marcus Whiffen, is an interesting recording of those churches in Britain which owe their inspiration in design to James Gibbs's masterpiece. The Copenhagen Broadcasting Building is well illustrated and described. Worthy of note is the flexible office planning, studio insulation and acoustics, as well as the planning of the building as a whole.

Eric Newton's article on "The Wartime Poster" analyses the profound changes which the poster—many fine examples are illustrated—underwent during the war, assesses its contribution and points to peacetime developments.

Of considerable local interest is Hilda Kuper's penetrating study of the Architecture of Swaziland, the result of some years research in Swaziland.

"THE ARCHITECTURAL FORUM," July, 1946.

This issue is devoted to "To-day's House—a house which must be small to squeeze under to-day's price ceiling, a house which must be carefully designed to wring the most space and flexibility out of to-day's inflated dollars, a house which must be prudently constructed to make the most of scarce materials, a house while, despite to-day's restrictions, must meet the public demand for quality as well as quantity." This is as

true of South Africa as it is of the U.S.A., and this issue, with its diversification of methods, construction and finishes well repays study although much is not applicable in this country.

"ARCHITECTURAL RECORD," July, 1946.

This issue continues the series of plans of various elements of the general hospital prepared by the U.S. Public Health Service, and includes Nursing, Service and Outpatients Departments. Also illustrated is a large Headquarters Building for the Army Forces Middle Pacific Command in Hawaii, which was built during the war. Building Types Study 115 is on "The School Shop for General Education," and deals with the planning of centres for Industrial Arts (manual training) education.

Architectural Engineering this month includes an illustrated article by Kenneth C. Welch on Reflection Factors in Stone Windows and a review of "Wartime Advances in Welding."

"PROGRESSIVE ARCHITECTURE — PENCIL POINTS," July, 1946.

This issue includes a number of commercial projects embracing offices and stores; a small radio station and two houses. Materials and Methods has "Specification Surgery," by Ben John Small, and "Looking Ahead on Building Codes," by George N. Thompson, of the National Bureau of Standards.

BOOK REVIEW

DRAUGHTSMANSHIP, by R. Fraser Reekie, Edward Arnold and Co., London, 1946. Price 10/6 nett.

This book describes and illustrates the technique of draughtsmanship in its various phases, and the methods of preparing drawings used in connection with the layout, design and construction of buildings.

Both in its primary purpose of providing the beginner with a complete knowledge and understanding of good draughtsmanship, and as a reference book for the more accomplished, this book in its small but remarkably informative compass, is an undoubted success.

The author has obviously had considerable experience of teaching the subject, and has provided a text very amply sup-

ported by diagrams and illustrations which may be readily understood by the beginner, and the scope is such as to render it extremely difficult to imagine what should or could have been added to its contents.

Valuable information for the experienced draughtsman or architect is contained in these pages in particular which deal with the subject of lettering, drawing layout and rendering.

Altogether with its 200 pages this is the most complete, comprehensive and authoritative publication on the subject the reviewer has yet seen, and it bodes well to become a standard text book for all students commencing the study of architecture. Certainly no student should be without it, and it is quite obviously the sort of information which should find a place in any architect's reference library.

W.D.H.

NOTES AND NEWS

THE GOOD OLD DAYS!

H. LINDHORST, ARCHITECT.
PLANS, ELEVATIONS,
Specifications & Estimates
CAREFULLY PREPARED.
Buildings personally superintended.
H. LINDHORST,
Architect,
JOHANNESBURG.
MARKET SQUARE,
JOHANNESBURG.

TELEGRAPHIC ADDRESS: LINDHORST, JOHANNESBURG.

From "THE GOLDFIELDS REVISITED, being Further Glimpses of The Goldfields of South Africa", by Edward P. Mathers, F.R.G.S. P. Davis & Sons, Natal, 1887.

PROFESSIONAL APPOINTMENT WANTED

STUART C. READMAN, A.R.I.B.A., A.A. Dipl.

4, Wirrell Court, Salisbury Road, Leigh-on-Sea, Essex, England.

My particulars are as follows. I was educated at the Architectural Association School of Architecture where I obtained my Diploma and R.I.B.A. Final in 1938.

Since then I have had two and a half years' experience in the office of Mr. A. W. KENYON, F.R.I.B.A. in London, carrying out work on a large hospital and several barrack buildings. The war years I spent as an officer

in the Royal Artillery, during which time I was on the staff for two years as Staff Captain.

I am now earning a salary of £700 p.a. as senior assistant in a London office where I have carried out complete the drawings for a £200,000 research laboratory in Abadan.

I am now desirous of obtaining employment in South Africa, for the benefit of the health of my wife, who is in need of a warmer, drier climate than that of England as she suffers from rheumatism.

Journal of the SA Architectural Institute

PUBLISHER:

University of the Witwatersrand, Johannesburg

LEGAL NOTICE:

Disclaimer and Terms of Use: Provided that you maintain all copyright and other notices contained therein, you may download material (one machine readable copy and one print copy per page) for your personal and/or educational non-commercial use only.

The University of the Witwatersrand, Johannesburg, is not responsible for any errors or omissions and excludes any and all liability for any errors in or omissions from the information on the Library website.