

over 350 years old, still has its use, for under it we find a Baldachino one hundred feet high covering an altar, where the highest aspirations of humanity towards the infinite and eternal are solemnised.

Bruneleschi's Dome, dominating the fair city of Florence, has also seen centuries of time, and is still the annual goal of thousands upon thousands of toilers and students, who aspire to look upon the world's masterpieces, each with its own tale to tell. In other countries they have pyramids, or a Taj Mahal—tombs, perhaps; but, like the great domes we have referred to, their tales shall be told and their praises shall be sounded for all time. But what of such trifles? By the grace of the Municipal Council, Sydney has a dome, and that dome is naturally supposed to have a purpose. If we ask, is it a tomb? unfortunately the response is "No," for there are some who might be spared from among us. Is it a shrine, then? And, if so, under its sacred canopy what do we find? Buddha's tooth? The book of the dead? The seven-branched candlestick? Captain Cook's relics? Nothing under these classes. It is not even the outward indication of the approaches to a palace of justice, or to the Council Chamber of the city; instead of such vanities and trifles it enshrines a threepenny soda fountain! of the commonest sort.—Since this paragraph was written it appears that the soda fountain has been sold up for arrears of rent.

It is, however, not only through the shortcomings of the Municipal Council that Sydney has become a shame and sorrow to her citizens, where all should have been to our glory and pride. We must not put all the blame on the aldermen, if a narrow policy which we might understand, if it were dictated by ignorance and greed, has left its blight on so much where there might have been one of the fairest cities on God's earth.

Many things are now being found out officially which thousands of citizens have known of, spoken of, and written about, as to its filthiness and corruption for years past, but no heed is paid to words in New South Wales unless the utterer has position, however true they may

be. Sydney is the home of inconsistency. We have one of the most costly sewerage systems in the world in operation, superseding the old City Commissioners' work. Some of the new sewerage works are as elaborate and costly in their construction as if they were intended for bank buildings, and yet with all this capital sunk and interest to be paid there has never been proper legal power vested in the Board that is entrusted with their management to compel property owners to connect with them. It now appears that the City Council has all the time had the power to do so, but did not make use of it. What is the consequence? Where do we find ourselves to-day? Simply wasting more good money on a scare instead of going systematically to work. It seems as if it was nobody's business to look after the interests of the people, and that in the emergency that has arisen the Premier of the colony has had to take the bull by the horns.

If an example is required to illustrate some of the effects of allowing public departments which are not responsible to the electors to carry out works, instead of leaving them to Boards of Works or great City Councils, as is done in other countries, we should look at Dawes Point. Forty years ago Dawes Point was known as the "Green Battery"; it was a valued recreation ground for the people who in those days lived at the north end of the town, and its velvet sward was a beautiful sight from the harbour. What is it now? Little better than a "muck" heap. One department wanted a little piece, and somebody else a bit more. The public must not look at this officer's servants, or see some other person's clothes on the line, so piece after piece was stolen from it, and has been enclosed by means of a series of ghastly corrugated iron fences. Lately a ferry landing has come to anticipate the future bridge, and its road of approach meanders through the grounds. And now, in these last days, to put a proper cope stone on the whole series of desecrations, we find that one of those little battlemented structures, such as are usually encompassed in ivy, and relegated to the most unobtrusive positions, has just been established at the very water's edge, in the most prominent way, to show how unutterable is our bar-

barity, and to mock every sense of decency which future visitors to our "Beautiful Harbour" may bring with them when they approach this conspicuous and naturally fine portal of our city.

If the present plague scare fully opens our eyes to the actualities of Sydney and its institutions, it will far more than compensate for the unfortunate loss of life it has so far caused. Nothing like it has ever occurred before to wake us up to the realities under which we live, and fortunately for us Mr. Lyne, the Premier, seems to have risen to his responsibilities to check the immediate spread of the visitation. At what cost in money and waste of energy over hurried and temporary measures we have yet to find out. Now is the time for the people to rise to their responsibilities, and never rest until our effete institutions are abolished, and a system of local government for the country districts, with a Greater Sydney Council for the metropolitan area are established. Every member of this Association and every citizen should read the pamphlet of a late visitor to our shores who has written forcibly on what has been done by local government in England. The address of the President of the Institute of Architects delivered in Sydney on the 8th ultimo shows us the appalling state of things which has been allowed to exist in our midst—a state almost to suggest that our City Council has been entirely dominated by landlord interests.

Within the memory of persons still living the waters of Darling Harbour flowed eastward of Sussex-street, both at the bottom of Margaret-street and at the Hay-market; and the shore approached very close to its west side at both King and Druitt streets. It is not so well known what a very large area of the city has simply been reclaimed from this harbour by the gradual deposition of refuse, thus making a continuous encroachment upon the waterway. This has been done often without either a lease of the ground or even permissive occupancy of the water site. Now, in the time of this plague scare, when the condition of Sussex-street and its neighbourhood is under stern review, it is well to draw attention to the fact that the country can probably take back a great deal of this land without paying any compensa-

tion for it, and without doing any wrong to the present holders. Of course, they would be paid for what they have actually purchased, and would be entitled to a premium for forcible resumption, but they would not ask payment for what they hold under the knowledge that it belongs to the Crown.

One wharf between Margaret street and Erskine street has been so restored, but, so far, no Government of New South Wales appears to have had a scheme to resume the whole of the western foreshores from the gasworks to the iron wharf in the interests of the community, for the very good reason that it would be an extremely costly proceeding. It is possible now, in view of what has recently happened, that all divisions of our political representatives may unite to strengthen the hands of the Government for the common good, and that we may yet be proud of the western waterfront of the city.

One of our cherished institutions, and one which contrasts in a marked way with American institutions, is the custom which has become rooted in our midst of looking to the Government for everything. This, of course, means power and patronage to those holding high positions, but it often means the people having to pay nearly double the price they should do for the attained results, or, what is worse, only getting one-half the number of effective improvements they otherwise might obtain for a given expenditure. The only remedy will be the multiplication of non-political corporations, such as the Railway Commissioners and the Water and Sewerage Board, but with this difference, instead of appointments to such boards being the rewards for political services, they must be more largely elective by the people.

When we make ourselves acquainted with the mighty works which the late Metropolitan Board of Works carried out for London, and see the continual addition to the roll of improvements effected by the London County Council, the division of authority which now obtains in Sydney is simply absurd, and would be ludicrous if the results were not so tragical. Our present Boards and the Council, with powers either undefined or overlapping, and at loggerheads with one another, would never be

able to present a solution of the Sussex-street and Darling Harbour difficulty; it is certain it should not be left to a Minister who may only have a brief tenure of office, or be settled by a Government Department. A Greater Sydney Council acting with a properly-constituted Harbour Board might devise an all-round satisfactory scheme.

Under these circumstances it would be presumption for an individual to dogmatise in a general paper, but as a practical contribution at a time when numbers of proposals having reference to the Sussex street and Darling Harbour difficulties are appearing in the press every day, no harm will be done by trying to narrow the issue, in our endeavour to see what should be the essentials of any great scheme of improvement. It is often proposed in an airy way, without showing exactly what the writers mean, that the Government shall resume the wharves and build a seawall along the whole water front from Dawes Point to the head of Darling Harbour. Other persons speak of resuming "from Miller's Point to Darling Harbour," and some mix up the city railway with the wharf question, not apparently knowing the authorities have long since decided that any extension to the city for passengers must be an entirely separate work to that of giving improved facilities for railway communication with the wharves. It seems to be lost sight of that at the north end of Sydney, between Dawes Point and Miller's Point, there are only wharves for deep-sea ships, and that they mostly have solid stone or concrete walls to retain the earth. Very little reclamation has been made there owing to high ground at the rear, and the deep water in front. This water under the timber is kept bright and clear by the ebb and flow of the tide. From Miller's Point southward it is different, because there are great reclamation and unhealthy spots above the gasworks, which fact the recent examination has unearthed. Above the bridge and up to the goods station, Russell's wharf is probably the only one which was reclaimed with unobjectionable material, and that was because foundry refuse and blacksmith's ashes were for years the principal material used for filling in. This locality, owing to the great area of the city which drained into it, has for a long time had a most unenviable noto-

riety, but it is certainly not so bad now as it was a few years ago, before some of the sewerage was diverted. We are hardly such epicures with our noses as the people of Cologne must have been, when the oft-quoted Cole ridge wrote—

“I counted two and seventy stenches, all well-defined and several stinks.”

One Sydney stink at the head of Darling Harbour, however, with an ebb tide and a falling barometer, has been known to be so tough and solid as to cause a man to remark, “You might chop it with an axe, but you would break the handle getting it out again.”

In discussing this question of the Darling Harbour frontages it has appeared to the author that it has three entirely separate aspects, to which a fourth has recently been added by a writer in a Sunday paper.

1st. There is the sanitary aspect as the most important, because the health and lives of the citizens are thereby concerned.

2nd. The commercial or business one, which is the “raison d’etre” for there being any wharves at all, and

3rd. The sentimental or aesthetic, which concerns our personal pleasures and our pride as a community in our city and its surroundings.

The fourth, suggested recently, is the social aspect, and refers to the rehousing of the residents of the quarter when the present maze of hovels are cleared away.

As regards the first of these aspects,—the insanitary condition which now obtains and the pestilential odours resulting from sewage being discharged into a dead end canal. There is no doubt that the new sewerage works have already erected improvements, and that, with the completion of the low-level intercepting sewers, Darling Harbour should certainly not have so much to complain of. Some years ago it was proposed that large culverts should be constructed to connect the upper end of Shea’s Creek extension at Eveleigh with the head of Darling Harbour. It was stated that lock gates and sluices could be so arranged that the Botany waters would fill Shea’s Creek on the flood and be there impounded, while at about three-quarters ebb tide sluices at the northern end should be opened to discharge the whole of the waters

into Darling Harbour. With such an arrangement—something like Smeaton carried out at Ramsgate—a great clearance would result, for the water which now simply rises and falls at the iron wharf would be entirely swept out towards the Heads every tide, and the place could be kept as pure as at Dawes Point. This idea may not have been worked out in detail, but may be found to have something to recommend it.

In any scheme for Darling Harbour improvement a solid and substantial seawall may be set down as being indispensable to the first set of conditions, in order to secure deep water and the absence of any dry foreshore at low tide.

The second—the commercial aspect of the question—appears to have been somewhat overlooked by numbers of persons who have proposals in this connection. It must be admitted that private wharf-owners have made the most of their frontages, and have built their jetties wide or narrow to suit their particular trade, and the vessels engaged in it. To sweep away the whole of the present jetties and make an imposing quay wall might be an improvement to the city, but it would not accommodate one half of the shipping business which centres on Sussex-street so well as it is now served. To purchase the whole frontage for, say, four millions of money, then spend two millions more on improvements to produce a property that would not be worth three millions, would not be good business. However, it might gratify our sense of order and the aesthetics of the case. It is a common thing to assume that the produce landed at Darling Harbour wharves should have railways convenient for getting it away. Now, the great bulk of produce that is water-borne to the Sussex-street houses comes for home consumption. The object of a goods line down Sussex-street would probably be more for the concentration of “produce” arriving both by land and water at the long-established centre of that trade, viz., Sussex-street.

If a railway is to be extended round the western side of the city, it must be a continuation from the present Darling Harbour depot. It should run at low level to make easy connections by sidings with wharves and

warehouses, and when it arrives as far north as the gas-works it would have to go into a tunnel to obtain sufficient radius for the curves, and thence it could be continued to a terminus at the Commissariat Stores on the Circular Quay, as proposed by Mr. Deane under his scheme (L.), as put forward some years ago. Such a railway would enable goods to be run from the Circular Quay entirely independent of any passenger lines that have been enquired into. It would have to run to the west of Sussex-street, unless the present location and grades of that street are to be entirely remodelled. The reclamation of more ground would reduce the already much restricted narrow waterway. Wharf-owners up at the head of Darling Harbour have lately made their influence felt in securing one of the largest swing bridges in the world to improve their properties and allow much larger vessels to be berthed, at the expense of the whole community. To reduce the waterway by much more reclamation would largely nullify the usefulness of the costly bridge opening.

Under our institutions as they exist the present property-owners will probably add the increased value given by the new bridge to the amount which Government would have had to pay for resumption before the new bridge was started.

Very large questions are opened when the resumptions and embankments, often so glibly spoken of, come to be looked at in a practical light. Parliament, however, has the option of two different courses. Government can resume the freeholds in the usual way, but probably a special bill would have to be passed to enable it to take, without compensation, the areas held without title. After resumption and the construction of a seawall with a solid reclamation at the rear, the various sites can be let to tenants under conditions which would enable them to put up timber jetties to suit the special trades. On the other hand, Government could bring in a bill making it imperative that, by a certain date, all the present sheet piling and the rubble banks (often only resting on the mud) shall be cleared away, and be replaced with a concrete or masonry retaining wall. With a certain minimum

depth in front at low water, nothing but storm water or overflow sewers should be allowed to discharge into the harbour.

Certain conditions should be imperative under either of these alternatives. The concrete or masonry wall should be solid, without interstices, and the whole area of the reclaimed ground, where it is now made up of decaying refuse, should be packed with several feet of stone ballast, and be metalled or concreted. No enclosed timber stores should be permitted on the solid quays, and no stores for food produce of any kind should be built on the wharves behind, with wooden ground floors; asphalt, or equally suitable material, should be imperative. To set out to exterminate rats, while giving them every chance to multiply, would be a fruitless task. Quite apart from the rat question, ordinary sanitary requirements demand that the old rotten timber shed, for grain or such like produce, be abandoned at once and for ever.

The sentimental and aesthetic aspect is one more for our kindred profession of architecture than for engineers; and to architects will belong also the important work—classed under the fourth head—of providing for the population who are concerned in the work at the wharves. The writer before referred to suggests that Government should offer premiums to selected architects for laying out the area, and for designs of tenement houses of the most modern type to suit the locality.

There are numbers of our institutions, beyond those already referred to, that might demand our careful attention, which cannot be touched without making this paper longer than the meeting could be expected to give its attention to. There are, however, two institutions of especial interest to engineers, and to architects also, for that matter, about which a few words may be said as to what they are and what they might be.

We all know the Technical College, and we are, many of us, proud of it—more or less; but few give heed to the very anomalous condition of affairs which now obtains with regard to its management. Technical education in New South Wales was founded and developed by a band of enthusiasts, every one of whom was an expert in one or more branches of technology. The work they

established grew and flourished until it became famous, and then—what happened? The great system of departmental centralisation, with its insatiable maw for patronage and power, which has already been spoken of, made its power felt in the Department of Public Instruction. With powerful Under-Secretaries, officers desirous of promotion, and weak Ministers, the experience of the past, the example of other countries, was thrown to the winds; misrepresentation and jealousy of its successes prevailed, and a great change was made under Ministerial provisions which have never been adhered to. Gentlemen trained as experts in the management of a Public School system, but without anything at all to qualify them for directing the teachings of professional experts and tradesmen, have for some years now controlled the management of technical education, until everything which breathed the spirit of the workshop, the laboratory, and the factory seems to have departed. The spirit of the Public School with a wrapping of red-tape has, however, taken its place, and appears to have either deadened or obscured all the enthusiasm, vitality, and individual exertion for the common good, which erstwhile distinguished the system.

In every other country where technical education has any important hold we find boards of advice, committees, or technical experts dominating and directing the work of the whole organisation, and, while keeping it within bounds, seeing that it is always up to date in its own proper work.

We have only to look at the great institutions at South Kensington or Finsbury, in London, to see the list of committeemen at such magnificent centres as the Massachusetts Institute of Technology, in Boston, to understand why our present absurd arrangement of departmental supervision is fast sapping the mainsprings which should underlie the whole system. One result of it has been to take credit for work carried on in the Public Schools that is not technical teaching at all as generally understood, and also to introduce new departments that should be under authorities.

The old Board had many visitors to its annual meetings, and every year its work showed advances. Its

president never had to apologise for the productions of its students, as was done by the present Director of Technical Education at the opening of a recent exhibition. The walls of the principal chamber were covered with travesties which were supposed to be paintings by students of the "Fine Art" Department, and a "fine" show was made.

The old Board decided that the Government might place the power to open a school of painting in charge of the trustees of the Art Gallery, or the Society of Artists, but that it was a branch which, unlike decorative art, was no part of the work which should be undertaken at a Technical College.

This College does good work in spite of being so heavily handicapped, and wants more room. Such additional accommodation should be given early, and it should be supplemented by no ungenerous hand, with the means to provide additional buildings and further appliances for teaching; but every professional man and every artisan who can help should be backed by the various trade organisations, and move earnestly and quickly to secure the restoration of a representative and competent Board as a corporation to take charge of this work.

The University Senate manages the institution under its charge. The Technical College is our university of industry, and should be treated in the same way.

When the present system of management is superseded by a rational one, and the selection of teachers is in the hands of specially-qualified men, then the whole of the block of land originally asked for by the Board of Technical Education should be resumed for the good work.

One more item which is of interest to engineers. Mr. Peter Nicol Russell, of the old firm of Sydney engineers, and with whom the author served his articles of apprenticeship, was by trade an ironfounder. He was a successful man, albeit he had never belonged to a university, and out of his regard for New South Wales, where he made his money, he has given the great sum of £50,000 to the Sydney University to promote the teaching of engineering. The University has accepted this money, and has made regulations under which, by passing in certain

branches of science and working for three years in the shops, a youth is eligible for the P. N. Russell scholarship.

When formulating the preparation necessary for an engineer, no corresponding alteration appears to have been made in the ordinary qualifications for matriculation, so that a student who proposes to be an engineer might be relieved of certain subjects that would be imperative, say, for a doctor or lawyer, and this is what has happened.

A youth has just served three years in leading Sydney shops. He has attended the Technical College, and he has taken the P. N. Russell scholarship. This young engineer has since proposed to enter the University for a degree in engineering, but is told on application, "You cannot enter for a degree in engineering until you have passed in two languages." The P. N. Russell scholar then said, "Let me enter now to save a year, but let it be understood that it shall be a precedent to my taking a degree in engineering that I shall get up two languages and pass in them." To this he is told, "No allowance can be made for whatever additional work a P. N. Russell scholarship may entail beyond that required of an ordinary undergraduate; it will not relieve him from having to pass in two languages." It may be added that the first P. N. Russell scholar is attending the course now, hoping that the obstacles to his engineering degree will yet be removed.

Enough has now been said to show that many institutions of Sydney are not perfect, that, probably, none are all that they might be, and all are a long way from the ideal. In a few months we shall open out a new century. Before that time will it be possible to stir up the hearts and minds of our people, to instill a little patriotism into them, and to get them to look a little deeper into the problems of life which await a solution at our hands? Can we uproot some of the selfishness, the unmanliness, and the want of resource which is now so characteristic of us, and which is so largely due to the Central Government being the dispenser of favours that should be carried out by local authority?

Will it be possible to profit by the experience of other countries, and bring common-sense to bear, and outroot a number of our ancient, helpless, incapable, and overgrown institutions? Will the present movement lead to replacing them with organisations established on the basis of election by the people? With the inauguration of Federation the Central Government of New South Wales should be a small affair compared to that of some of the great cities of the other side of the world, and its expenditure ought to be brought down to less than six millions a year instead of being nearly ten. With the initiation and fostering of a widespread system under which self-reliance and personal interest in public works is promoted, many who are here to-night may live to see Sydney and New South Wales so changed that what is written in this paper will, if read in the future, look like an unwarranted slander. May we, in those days, be able to contemplate the glorious works with which man has supplemented a bountiful nature, and be surprised with pride at the new conditions of affairs that will then prevail in our chief city and our country generally.

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