CHAPTER TWO

THE POLYTECHNIC CONCEPT AND THE FOUNDATION

Sir Walter Besant

The polytechnic concept may be said to have had two begetters; Sir Walter Besant and Quintin Hogg. Sir Walter Besant was not only a voluminous and fascinating writer on the history and topography of London, still read, he was also the author of lengthy novels which attract minimal readership today. One of these novels was "All sorts and conditions of men" and it was Utopian in that it expressed the view that music, concerts, dancing, art, sports and lectures, would, if freely provided, raise the moral tone and life style of the poor workers of East London. Besant's novel inspired Sir Edmund Currie to try to create a "Palace of Delight" in the East End. In his "Autobiography" Besant recounts how this happened and how it progressed: "One of the things very much wanted in this great place was a centre of organised recreation, orderly amusement, and intellectual and artistic culture. So I pictured an heiress going down to the place under the disguise of a dressmaker, and I showed how little by little the same idea was forced upon her; how she was aided in this discovery by a young man who by birth, not by education, belonged to the place, and how in obedience to their invitation the Palace of Delight arose. The rest has been told a hundred times. Sir Edmund Currie, trying to create such a place, used the book as a text-book. The Palace was built. It was opened in 1887." "I have often been asked what the Palace has done. It has done a great deal; but it has not done one-quarter, not one-tenth part, of what it might have done. It was built and furnished with a bath, a splendid organ, a complete gymnasium, one of the finest library buildings in London, a winter garden, art schools, and a lecture room. Unfortunately a polytechnic was tacked on to it; the original idea of a place of recreation was mixed up with a place of education."

"More money was wanted. I hoped that Sir Edmund, who was greatly respected in the City, would, as he half promised, boom it in the City. But he did not. However, we started with all the things mentioned above, and with billiard-rooms, with a girls' social side, with a debating society, with clubs for all kinds of things — cricket, football, rambles, and the like; we had delightful balls in the great hall, we had concerts and organ recitals, the girls gave dances in their social rooms; there was a literary society; we had lectures and entertainments, orchestral performances and part singing;
nothing could have been better than our start. We had a library committee, of which I was the chairman. We collected together about fifteen thousand volumes! . . ." 3

Thus Besant was not happy when the Drapers' Company took over responsibility for the People's Palace and grafted on the educational side to what was certainly the prototype of the social side of the early Northampton and other polytechnics. In due course this Mile End scheme evolved into East London College and subsequently into Queen Mary College, University of London.

Quintin Hogg

If then, the social side of the polytechnic concept stemmed from Besant, we can trace the origin of the educational side to the present Lord Hailsham's grandfather, Quintin Hogg (1845-1903). During his days at Eton, Quintin Hogg became a convinced evangelical Christian and the "improving" nature of his educational work can perhaps best be appreciated in his own words:- "My first effort was to get a couple of crossing-sweepers whom I picked up near Trafalgar Square, and offered to teach how to read. In those days the Thames Embankment did not exist, and the Adelphi Arches were open both to the tide and the street. With an empty beer bottle for a candlestick and a tallow candle for illumination, two crossing-sweepers as pupils, your humble servant as teacher, and a couple of Bibles as reading books, what grew into the Polytechnic was practically started." 4

After a few months of this work he and the Hon. Arthur Kinnaird, with whom Hogg was contemporary at Eton, hired a room in "Of Alley" (later York Place, Charing Cross), and started the ragged school from which the Polytechnic was to spring. But local authority provision of education began to make ragged schools unnecessary. Then Quintin Hogg turned his attention to young wage earners and trade instruction. Preparing young lads for emigration to a better life overseas was part of his scheme of things. The next move of his school was to larger premises in Castle Street, off Hanover Street, and there the front part of the house came to be devoted to an "Institute for better-class boys." In 1878 room was found for five hundred members in premises in Long Acre, and, with an entrance fee of one shilling and a weekly subscription of threepence, a waiting period of one year developed for males aged 16 to 22, all keen to join his Youth's Christian Institute.

In September, 1882, the Long Acre premises were closed on his acquisition of an existing Institute of a somewhat different kind, the Royal
Polytechnic Institution in Regent Street. This was “Pepper’s Polytechnic” run by “Professor” Pepper a showman science populariser and author of “The Boy’s Playbook of Science”. The Building housed a diving bell, electrical and mechanical apparatus, etc. which were all taken over by Hogg, who also retained the name of the building. It cannot be said, therefore, that Quintin Hogg’s Polytechnic and its emulators were the British versions of the French écoles polytechniques or the Polytechnikum of Zurich. The name stemmed not from them but from a building that had housed an 1838 foundation devoted to the “advancement of practical science in connection with agriculture, art and trade” and this building just happened to be available and suitable for Quintin Hogg’s philanthropy of 1882. He spent £80,000 of his own money on the purchase, fitting and endowment of the Institute in the following two years.

A scheme of technical educational classes was drawn up with fees of up to four shillings for seven months of evening classes and within a year there were a hundred such classes. The classes were geared to City and Guilds of London Institute examinations with the teachers being paid by the Department of Science and Art according to the examination successes of their pupils. On the opening night in 1882 “over 1000 new fellows booked” (as members) and during the first winter the total reached 6,800. This factor, great demand for the the facilities provided, the deliberate policy of levying a small charge, (for the Victorians believed, probably rightly, that a service provided freely is often thought of by the recipient as a service without cost to the providers, and valued accordingly), and the decision to start a day school, were three features that were subsequently reflected in the scheme for the Northampton and other polytechnics.

Hogg wrote:- “I confess to having a strong dislike to seeing so many rooms at the Polytechnic lying empty during the daytime when there are so many useful purposes to which they may be put. I have determined, therefore, both with the view of promoting artizan education and for other reasons, to start a day school on 1st January 1886. The school will have three sections:- 1. Professional, 2. Commercial, 3. Industrial.” He sought 100 students and enrolled 150; in eighteen months the total was 430, and by 1904 there were 1,169 day school boys. 

All-round development of his pupils was a primary concern that Quintin Hogg was continually stressing. Thus physical well-being, plus educational opportunities, plus religious instruction, were essential parts of his Christian polytechnic concept. “What we wanted to develop our institute into was a place which should recognize that God had given man more than one side to his character, and where we could gratify any
reasonable taste, whether athletic, intellectual, spiritual or social. One of the great attractions of the Polytechnic was the gymnasium. The members were encouraged “to come in their working clothes directly after leaving work, and to spend the whole of the evening at the Institute, refreshments being provided at a moderate cost, and recreation and teaching being jointly cared for. In addition to the teaching on the week-days, the largest adult Bible class in the world (Mr. Hogg believed) is held on the Sunday, when he has an average attendance of 660 young men in one class. In order to give them a sufficient amount of outdoor exercise, he had leased a field of 13 acres at Barnes for cricket, lawn tennis, football, etc.”

The City Parochial Foundation

We have already noted the spirit of enquiry into the activities and finances of established corporate foundations such as the universities, the endowed schools and the Livery Companies that aroused them to new activity in the latter part of the nineteenth century. The City of London Parochial Charities were also subject to investigation. Many of the objects for which money and property had been bequeathed to parishes over the centuries had ceased to exist. There was one bequest, for example, of six shillings and eight pence per annum for the purchase of faggots for the burning of heretics! The property bequeathed had grown in value with the development of the City as the commercial capital of the world. At the same time the “square mile” had ceased to be a residential area, for the old pattern of master and apprentices living on the business premises with the journeymen coming in to work daily from nearby in the same parish had changed. The buildings came to be occupied in the daytime only, with the work force leaving each evening for the rapidly extending suburbs. One parish with a population of 580 souls had an annual charitable income of over £2,000 and another with 699 inhabitants had £4,686 coming in. Parishes were numerous and small in any case, so it was often impossible to find twelve really poor men or deserving widows or whatever a bequest required, residing in a parish, to receive the payments willed. Property values soared in the period with which we are concerned.

Whilst it is true that some parishes obtained powers to enable the diversion of funds to new charitable objects such as schools in London suburbs, the majority did not. Thus between 1878 and 1880 a Royal Commission, under the chairmanship of the Duke of Northumberland, to enquire into the condition and administration of the parochial charities of the City of London gathered evidence and reported. The City of London Parochial Charities Act of 1883 resulted. This Act required a corporate body
to be known as the “Trustees of the London Parochial Charities” to take
over the administration of the charitable monies of all but the five largest
city parishes; for these five still had some population classed as “poor”.
The first requirement to be met was ecclesiastical purposes and for the rest
they were to frame new “schemes”. In this category there was over £3
million which “should promote the welfare of the poor of the Metropolis by
way of education, free libraries, open spaces or otherwise.” This £3 million
taken over from the 107 parishes would produce an income of £85,000 per
annum, of which £35,000 would be used for ecclesiastical purposes and
£50,000 for secular objects as indicated. The first named Commissioners
were then strengthened by the addition of James Anstey, Q.C., Edward
Bond and Henry Hardinge Cunynghame, who were asked to discover the
needs. Cunynghame visited the Regent Street Polytechnic and was so
immensely impressed by seeing it in action that he conducted the other
commissioners there also. They then advocated the use of the funds to
assist the founding of polytechnics modelled on Regent Street and the
Northampton Polytechnic Institute was thus founded.

The Finsbury Technical College

There were, however, three institutions upon which the Northampton
Polytechnic Institute was modelled. In addition to the People’s Palace
model for the “social side” and Quintin Hogg’s Regent Street Polytechnic
model for the educational side, there was a potent influence lying much
nearer at hand in the Finsbury Technical College in Leonard Street, off the
City Road, behind Finsbury Square. The Finsbury Technical College was
erected at a cost of about £36,000 and was opened on 19th February 1883,
“to serve as a model trade school for the instruction of artisans and of other
persons preparing for intermediate posts in industrial works. It consists of a
school of applied science and art. There is a day and an evening school. The
latter provides systematic instruction for those who are engaged in the
staple industries of the district, including cabinet-making; and in the
applications of chemistry, mechanics and physics, to special trades, such
as spirit rectification, mechanical engineering, electric lighting, etc. The
subjects taught comprise mathematics pure and applied, practical
mechanics, chemistry, physics, electrical technology, freehand, model and
machine drawing, workshop practice, French and German; and in the
evening additional classes are held in carpentry and joinery, metal-plate
work, bricklaying, drawing, painting, modelling and design.”

The prospectus actually invites “persons of either sex”, but the
Finsbury College in fact attracted few female day students, possibly
because the accommodation was so inadequate, with no lunch room or common room. Among evening class students, however, there was a greater proportion of women. The Northampton Polytechnic Institute, certainly, from the outset, made suitable provision to encourage female participation in all the activities provided, and did thus benefit from the experience of its pioneer neighbour. No actual trades were taught in the College; the nearest approach to trade teaching being practical instruction in plumbing and metal plate work. Another feature of Finsbury Technical College was that it did not prepare its students for any external degree or examination, but provided its own certificates which became widely accepted. To enter one needed to pass an entrance test in mathematics and English (particularly précis writing and composition) and to be of any age over fourteen years.

Silvanus Phillips Thompson was Professor of Electrical Engineering at Bristol University College before succeeding Professor W.E. Ayrton as Professor of Physics at Finsbury at the age of 34 in 1885, Ayrton had moved over to the other institution financed by the City and Guilds of London Institute, the new Central Technical College at South Kensington, together with the Finsbury Professor of Chemistry, H.E. Armstrong. This left only Professor John Perry, F.R.S., Mechanical Engineering, at Finsbury, and Thompson at the same time became Principal. Indeed he would not have come to the College for a lesser post. Philip Magnus, the Directing Secretary, thereafter concentrated on the Central College and on the City and Guilds examinations system. Perry had been associated with Ayrton in the setting up of the electrical engineering laboratory at Finsbury and "electrical science at that time had hardly yet been recognized as a branch of engineering." As Principal, Thompson was expected to give one or two evening lectures per week from October to May as well as undertaking a very heavy workload during the day.

Before coming to Finsbury, Silvanus Thompson had expressed his views on technical education in a paper to the Society of Arts in 1879. "No apprentice should be allowed to do anything without being shown or told how to do it." The existing British system was often to allow an apprentice to copy ill-informed bad methods. "Instruction in the general principles of science which underlie almost all handicraft trades, ought to be taught systematically to the learner by teachers who understand what they are teaching and who are also acquainted with the practical details of the trade." Later, in 1893, J.H. Reynolds, Director and Secretary of the Municipal Technical School, Manchester, wrote: "Finsbury is to me the prototype of what technical schools should aim to be . . . I have striven as
far as circumstances permit to realise these conditions in the Manchester
School."12 As to what these conditions were; to use Silvanus Thompson’s
own words, “the education given in the college presents several points in
marked contrast to an ordinary college education. The laboratory, the
workshop, and the drawing office take up the main portion of the student’s
time. For every hour in which the student is being talked to in the lecture
room, there are two hours in which he is instructing himself in actual
work.”13

In his time at Finsbury, which extended to the end of his life at the age
of 65 in 1916, the College was considerably enlarged and it was in this
period, also, that he wrote his noted textbooks and translations:-
“Polyphase electric currents”, “Design of dynamos”, “Calculus made
easy” and “Photographic optics”, among others, but he had earlier
published his pioneer, “Elementary lessons in electricity and magnetism”
and “Dynamo-electric machinery”. In “Life and Letters” we read:- “the
subjects of electricity and magnetism and others connected with electrical
engineering such as dynamo design, electric bells, electro-plating, when
inaugurated by Thompson, brought crowds of eager young men to the
college, and later on courses on technical optics attracted men from greater
distances, some even from Nottingham and Leicester who had to travel
back by night in order to be at work the next day, so keen were they to
profit by his remarkably lucid and clear explanations of complicated optical
phenomena.”14 Silvanus P. Thompson was elected a Fellow of the Royal
Society in 1891.

Thus the new development in electrical engineering and optical
technology as taught by leading exponents in a highly practical way at
Finsbury Technical College proved to be the model for the syllabus at
Northampton Polytechnic Institute. This approach to technical education,
the “heuristic” method of learning by practical experiment the scientific
principles behind the technical advances of the day was pioneered by
Armstrong and Ayton at Finsbury. Indeed, Armstrong advocated “the
teaching of scientific methods in schools, the beginning of experimental
studies at the very earliest possible moment, so that children from the
outset may learn to acquire knowledge by their own efforts.”15

Finsbury Technical College, then, began to change scientific
instruction along the right lines for that day and age. It could not do much
about the problem of the wide range of attainment of students on entry that
the 1868 Parliamentary Select Committee on Scientific Instruction had seen
as the main problem, for this problem arose from lack of a proper system of
secondary education and a shortage of science teachers, but things were
changing. Where it could make an impact was in dealing with the problem
drawn to the attention of the Royal Commission on Scientific Instruction
1870-75 (The Devonshire Commission), by key figures in British science:-
"The Englishman is superior in manual skills generally, but inferior to
foreign competition in technical education; by this I mean mensuration in
drawing, understanding of complicated drawing and elementary knowledge
of geometry and mechanics." 16 Philip Magnus was able to advance his
view from there being "no country so far behind in the matter of technical
education as Great Britain. The very meaning of the term was not
understood" to "In the small laboratories of Finsbury Technical College the
beginnings were laid of that reform in science teaching which the pioneers
of the technical education movement were foremost in promoting." "What
was taught at Finsbury was the practical application of the first principles of
chemistry, electricity and mechanics. Professor Armstrong, who was in
charge of the Chemistry Department, based his teaching not so much on
facts as on finding out." As to the scale of provision at Finsbury there were
185 students in 1892 and the annual contribution of the City and Guilds of
London Institute was £5,900 at that time. The College was not endowed, be
it noted, but supported by these annual contributions, Department of
Science and Arts "payments by results" and students' fees.

If one walks along Leonard Street today, one can see a grey London
brick building bearing on one side of its entrance the legend "Shoreditch
County Court" whilst high overhead is a stone frieze incorporating figures
holding volumes entitled "Wheatstone", "Faraday", "Liebig" and "New-
ton" so that one cannot fail to recognize the old Finsbury Technical College
building whilst, in Cowper Street, at the rear, we can find the original
school buildings housing the Central Foundation Grammar School.

The Northampton Polytechnic Institute was in some sense the true
successor to that famed institution, the Finsbury Technical College. In the
selection of departments, in syllabus and in purpose, there was, early on,
clear correspondence. Northampton's first Principal Mullineux Walmsley,
previously taught at Finsbury under Silvanus Thompson and he moulded
his own College in the same pattern. Finsbury also supplied to the
Northampton Polytechnic Institute other noted teachers such as R.P.
Howgrave Graham and Frederick Handley Page, about whom more will be
said later. When Finsbury Technical College was closed down in 1926, it
was pointed out by the London County Council that the thriving
Northampton nearby was carrying out the same educational role. The latter
was designated its successor, at least by the L.C.C.
The Central Technical College

The Royal Commission on Technical Instruction 1882-1884 (The Samuelson Commission) was set up "to enquire into the instruction of the industrial classes of 'certain foreign countries' in technical and other subjects, for the purpose of comparison with that of the corresponding classes in this country; and into the influence of such instruction on manufacturing and other industries at home and abroad." The members of the Commission were Bernhard Samuelson, F.R.S., Henry Enfield Roscoe, L.L.D., F.R.S., Philip Magnus, B.A., B.Sc., (who thus acquired a knighthood), John Slagg, Swire Smith and William Woodall. There was much visiting of foreign educational establishments, particularly by Magnus and he clearly had great influence both on the enquiry and the report. The Report refers to the technische hochschulen that had been set up in the second decade of the nineteenth century, for by 1870 they had a total of some 3,500 students. "To the multiplication of these polytechnics", they wrote, "may be ascribed the general diffusion of a high scientific knowledge in Germany, its appreciation by all classes of persons and the adequate supply of men competent, so far as theory is concerned, to take the place of managers and superintendents of industrial works. In England there is still a great want of this class of persons . . ." The same report, in referring to the Paris International Exhibition of 1879, goes on, "Your Commissioners cannot repeat too often that they have been impressed with the general intelligence and technical knowledge of the masters and managers of industrial establishments on the Continent." The Germans had "devoted special attention to a matter which England had almost ignored, the scientific or technical instruction of their own people to a point where they had little to learn from the English" and, again, "the industrial efficiency of Britain's rivals was based on their superior educational systems. The progress in German workshops has been positively marvellous." 17

The recommendations of course included: "that the teaching of science and art in training colleges be made efficient." The Central Technical College, to which we have referred, and of which Magnus was Director was certainly modelled on continental polytechnics. It was completed at the end of June 1884 and opened in 1885. Its first students conducted their laboratory work at Finsbury Technical College whilst South Kensington was being completed. The two institutions were complementar-
Charitable and Public Funding

None of the experiments outlined in this chapter could have continued and developed and the new institutions that followed could not have long survived unless there had been present in this period the gradual evolution from private charitable funding towards a mixed economy of public and private funding. The local and central governmental finance rapidly became the main element, but the charitable finance for those institutions fortunate enough to receive it gave them a measure of independence of action that was wholly beneficial.

The "new schemes" that the 1833 London Parochial Charities Act had required the Charity Commissioners to prepare were somewhat tardy in appearance. Eight years! As early as 1884 the Royal Commission on Technical Education (Samuelson Commission) Report contained a recommendation: "That steps be taken to accelerate the application of ancient endowments under amended schemes, to secondary and technical instruction." 18

In 1889 The Technical Instruction Act stated inter alia: "A local authority may from time to time, out of the local rate, supply or aid the supply of technical or manual instruction. The rate was not to exceed one penny in the pound."

This Act is distinguished by incorporating a definition of technical education as follows: "The expression 'technical instruction' shall mean instruction in the principles of science and art applicable to industries, and in the application of special branches of science and art to specific industries or employments. It shall not include teaching the practice of any trade or industry or employment, but, save as aforesaid, shall include instruction in the branches of science and art with respect to which grants are for the time being made by the Department of Science and Art and any other form of instruction (including Modern languages and commercial and agricultural subjects) which may for the time being be sanctioned by that Department by a minute laid before Parliament, and made on the representation of a local authority that such form of instruction is required by the circumstances of its district."

An extra sixpence per gallon tax levied on spirits under an Act of 1890, Local Taxation (Customs and Excise) was destined for compensating public house owners who might suffer the withdrawal of licences to trade. The planned use of the revenue from the tax was abandoned but not the tax. It was then decided that the tax monies should be handed over to County Councils unconditionally but with a recommendation that some of the
money, at least, should be applied to technical education. This proposal for
the use of the money came from Arthur Acland, M.P., and it lead to the
provision (between 1890 and 1902) of twenty-five polytechnics and
technical colleges and a hundred science schools. Quintin Hogg was a
London County Councillor at the time and it was on his motion that the
L.C.C. decided to adhere to the recommendation of Parliament and in
London £30,000 was devoted to technical education from this source. This
fund was inevitably known as the “whisky money” and the Northampton
Polytechnic Institute was one beneficiary.

The City Polytechnic

Capital to the total of £149,500 was initially allocated to the
polytechnics for buildings and equipment by the Trustees of the London
Parochial Charities under the 1883 Act. This included £51,100 for the City
Polytechnic. The rest of the monies were invested to provide annual
grants “to polytechnics and kindred institutions, totalling £22,550 p.a.”

The City Polytechnic came to be formed because two existing
colleges, namely the Birkbeck Institute and The City of London College
each wished to secure Charity Commission funding and at the same time
there was active promotion of a scheme for a polytechnic in Finsbury. It
being considered that there was not enough money available to support all
these demands, a fortunate occurrence, that is the withdrawal of a request
for £2,000 per annum by the Institute at New Cross on its being supported
by the Goldsmiths’ Company, led to this money being made available. The
Commissioners then encouraged the three colleges that were not unduly
distant from one another to associate together to form The City
Polytechnic.

In fact the scheme approved on 23rd June 1891 reads, in part, as
follows:-

The City Polytechnic

““The Charities to which this Scheme relates are the Northampton Institute,
The Birkbeck Institute and the City of London College, which are hereby
united as Constituent Institutes in a Central Polytechnic to be called the City
Polytechnic.”

Other clauses in the scheme provided *inter alia* that each institute
should be managed by its own Governing Body, that members of any
Institute should be entitled to the benefits and privileges belonging to
members of the others and that the equipment provided and the work
carried on, whether educational or recreative, in the several institutes

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should be so arranged and distributed as to economise their resources and to avoid unnecessary duplication. Specifically the scheme laid down:

"There shall be provided at the Northampton Institute, — Instruction requiring the use of tools, workshops and other technical appliances; Recreative facilities; and Such other educational means as its Governing Body may determine. Provided that the Commissioners shall determine all questions arising under this clause, and in particular shall, with respect to the Northampton Institute, determine what buildings and equipment and what educational and recreative facilities shall be provided thereat." 22

The scheme goes on to require a Council of twelve members for the City Polytechnic, three from the Central Governing Body (The Trustees of The London Parochial Charities) and three from each of the Governing Bodies of the three Constituent Institutes; each with a six year term of office. The linking of the three partners was not effective and there was reluctance even to use the name "City Polytechnic" on the prospectuses and annual reports of the individual colleges. The Technical Education Board of the London County Council soon noted that the Birkbeck Institute and The City of London College were not interested in working together and were acting as though no formal amalgamation structure existed; there was danger of requests for money for duplication of expensive laboratories!

The Northampton Institute

Exact specification of the composition of the Governing Body of the Northampton Institute was detailed in the Charity Commissioners’ Scheme. There were to be seventeen members made up of three appointed by the Central Governing Body, one by the London County Council, one by the School Board for London, four by the Skinners’ Company, one by the Saddlers’ Company, one each by the Governing Bodies of the Birkbeck Institute and the City of London College and five co-optative members. These five included three engaged in the watch and clock trade, the major local industry, Thomas Baxter of 35 Goswell Road, Daniel Buckney of King’s Square, and William Craighead of 27 St. John Street. The other two were Miss Maud Wyld and the Hon. Emily Kinnaird, whose father had assisted Quintin Hogg in running his “ragged” school. Conditions of membership and election procedures were laid down.

Paragraph 20 of Appendix E of the thirty-ninth report of the Charity Commission states:

"The Governing Body shall erect upon the site lying between St. John Street Road and Northampton Square, given for that purpose by the
Marquess of Northampton... at a cost and according to plans to be approved by the Commissioners, an Institute..."

"In the first instance they shall erect on such part of the site as may be determined upon, the buildings required for a hall, a swimming bath, a gymnasium, and for technical and industrial classes, and for such other purposes as may be determined upon. But the rooms and workshops applicable to the purpose of technical and industrial classes shall be arranged with a view to extension." 23

The Schedule of Property of the Northampton Institute indicates that by far the largest part of the capital of £51,100, noted above as being provided by the Trustees of the London Parochial Charities for The City Polytechnic, was for the Northampton Institute, which, after all still had to erect its building. This sum was £46,100 (including £5,100 in Consols, the proceeds of the Charity of Dame Alice Smythe, transferred from the Skinners’ Company). Additionally an annual sum of £2,000 would be accumulated until required and the site had been donated by the Marquess of Northampton. As to income: £1,000 per annum was to come from the Skinners’ Company, £3,360 per annum from the Trustees of the City Parochial Foundation, together with income from Robert Kitchin’s Charity via the Saddlers’ Company as noted beneath.

Robert Kitchin’s Charity

One of the best examples of those City charities that by the late nineteenth century had become impossible to administer, was that of Robert Kitchin. In 1555 Robert Kitchin, an Assistant in the Saddlers’ Company and sometime Warden of that Livery Company left certain lands in the Parish of St. Olave, Hart Street, to the Company. He stipulated that every Sunday in the year, before noon, for ever, twelve poor people of the Parish of St. Ethelbridge (sic.), should be given twelve pence a piece, and the sum of fifteen shillings and four pence should be given “every year, yearly, for ever” to the Church Wardens of the Parish of St. Ethelbridge for the repair of that church. Also “the youngest Warden” of the Company should receive three shillings and fourpence a year for his trouble in the distribution of these alms. The residue of the rents of the lands and buildings bequeathed, was to be used for ever on the upkeep of the said properties.

The impossibility of administering such charities in the manner that their founders’ wills required is apparent, for the resident populations of the many tiny parishes in the City’s square mile had given way to office and
warehouse buildings making it impossible, for example, to find twelve indigenous poor to whom to give Robert Kitchin’s twelve pence per year. Thus Kitchin’s was one of the charities reallocated by the “Schemes” of 1891 set up by the Trustees following the 1883 City of London Parochial Charities Act. The income was thereafter to be divided into 101 parts and 78/101ths was to be paid to the Northampton Institute “for the foundation and management of the said Institute”, and the rest to the Parish of St. Ethelburga-the-Virgin, Bishopsgate, annually. To this day The City University, as the corporate successor to the Northampton Institute, receives these funds.

The Objects of the Institute

Few institutions can ever have been founded with their aims and objects so fully defined. “The promotion of the industrial skill, general knowledge, health and well-being of young men and women belonging to the poorer classes, by the following means:

1. Instruction in:
   a) The general rules and principles of the arts and sciences applicable to any handicraft, trade or business.
   b) The practical application of such general rules and principles in any handicraft, trade, or business.
   c) Branches or details of any handicraft, trade, or business, facilities for acquiring the knowledge of which cannot usually be obtained in the workshop or other place of business.

   The classes and lectures shall not be designed or arranged so as to be in substitution for the practical experience of the workshop or place of business, but so as to be supplementary thereto.

2. Instruction suitable for persons intending to emigrate.

3. Instruction in such other branches and subjects of art, science, language, literature and general knowledge as may be approved by the Governing Body.

4. Public lectures or courses of lectures, musical and other entertainments and exhibitions.

5. Instruction and practice in gymnastics, drill, swimming, and other bodily exercises.

6. Facilities for the formation and meeting of clubs and societies.

7. A library, museum, and reading-room or reading-rooms.”
The influence of the example of Finsbury Technical College is manifest in these objects as is that of the Regent Street Polytechnic as well as Sir Walter Besant's "Palace of Delight" for the deprived. The three threads are all here: the practical approach to technical education, the healthy sports and activities of the social side, and the music, entertainment and general cultural approach. Both sexes were to be catered for with joint use of libraries, reading rooms, lecture rooms, exhibitions and entertainments but with separate entrances for males and females and differing times for swimming and gymnastics. Separate common rooms were provided for each sex. There was to be no religious test or qualification for entrance to any of the benefits of the Institute, or for the holding of any office therein. Use of the buildings or grounds for any political, denominational or sectarian purpose was forbidden, but debating political subjects in a debating society was allowed. The regulations prohibited intoxicating liquors, smoking, gambling, profane or indecent language in any part of the building. "Nor shall any dramatic representation or dancing be permitted." Suspension was the penalty.

Membership of the Institute was limited to the poorer classes between the ages of 16 and 25. The subscription was to be kept low and a registration fee on application for membership was to be one shilling. Members were entitled to the following privileges:-

1. Free admission to the library, museum, reading-rooms and common rooms.

2. Admission to special courses of lectures, the ordinary evening classes, gymnasia, drill and playing grounds, and swimming and other baths at such reduced fees, not being less than one half of the ordinary fee, as may be from time to time determined by the Governing Body.

3. Facilities for the formation and meeting of clubs, or societies as hereinafter provided."

The regulations relating to the classes to be held were worded in such a way as to enable the Governing Body wide scope for extension and development. Phrases come to mind such as: "The classes shall, as a rule, be held in the evening at such times as may be most convenient to those who are employed in workshops and other places of trade and business during the day." The fees were to be "what may be reasonably expected to be paid by persons belonging to the poorer classes between the ages of 16 and 25, but admission thereto shall not be limited to persons between those ages." The right was retained to arrange the holding of advanced classes for higher instruction, in any special branch or subject of art, or science, or
industrial commercial or general knowledge. Continuation classes could be held in the evening for ages 13-16 (i.e. post elementary school of that period). Examinations and the award of prizes were to be encouraged, both the Department of Science and Art examinations and those of any other body approved by the Central Governing Body.

Entertainments, exhibitions and public lectures would not be free, but to members of the Institute a reduced price of admission might be charged. The swimming bath, gymnasium and other recreational facilities and the library could be used by non-members at the discretion of the Governing Body and under such terms and conditions as it might from time to time determine. Clubs and societies would all need approval, for formation, rules and regulations, and fees. These, then, were all the important matters with which the Regulations concerned themselves in 1891. The Northampton was not, however, opened until 1896 and therefore the activities of the Technical Education Board of the London County Council were of great relevance from the outset.

The Technical Education Board

In 1893, the London County Council set up a Technical Education Board under the Technical Education Acts, 1889-91. The Board had considerable independence but had the active support of the Council. Its Chairman was Sidney Webb and it comprised twenty members of the L.C.C. and fifteen representatives of other bodies. The income of the Board, as we have noted, was derived from the "whisky money", that is, the customs duty on spirits and beer raised under the 1890, Local Taxation (Customs and Excise) Act, as well as from local rates. The presence of so many as fifteen representatives of other bodies, is explained by the fact that the aim of the Technical Education Board was to aid and reinforce the supply of technical and secondary education rather than itself make direct provision. The School Board for London, The City and Guilds of London Institute and the City Parochial Charities Trustees were the major bodies already in the field. Even so the overlapping nature of spheres of interest of the School Board for London and the Technical Education Board led to conflict, resolved only by the Cockerton judgment of 1900-01 that meant the transfer of the activities of both these Boards to the London County Council in 1904, after the 1902 Education Act.

The Minute Books of the Technical Education Board clearly display the influence of a report by the Secretary of the Special Committee on Technical Education, H. Llewellyn Smith. This report of 1892, was "the
result of an inquiry into the needs of London with regard to technical education, the existing provision for such education, and the best means to be taken by the London County Council for improving that provision.” Whilst existing institutions should be aided, he considered, Llewellyn Smith had no doubt that they were insufficient even with L.C.C. aid to meet the ends at which they aimed. “On the contrary,” he wrote, “in the work now being done for Technical Education, London is not only very far behind Germany and France in quantity and quality, but also far behind our chief provincial towns. The number of students on the register of evening technical classes in Manchester has more than doubled since the Corporation took action under the Technical Instruction Acts. At present (excluding commercial and domestic subjects) this number reaches over 14,000. To be on a level with Manchester there should be 140,000 entries in corresponding classes in London instead of the 24,000 revealed in my inquiry.”

There is thus, from the outset, a pressure toward central control. The Technical Instruction Acts empowered the County Council to supply, aid the supply and promote technical education. The first obviously involves setting up L.C.C. colleges, the second aiding existing institutions and the third responsibility for standards through the medium of examinations, scholarships and prizes. Expenditure of public money involves central control: “The local authority shall, for the purposes of this Act, be represented on the governing body of the school or institution in such proportion as will, as nearly as may be, correspond to the proportion which the aid given by the local authority bears to the contribution made from all sources other than the local rate and money provided by Parliament to the cost of the technical or manual instruction given in the institution aided.” The report noted that the Trustees of the City Parochial Charities, the Central Governing Body, had L.C.C. representatives on it. Each polytechnic would also have L.C.C. representatives to meet the requirements of the Acts.

As to meeting the needs of local industry the Llewellyn Smith report noted that the Northampton Institute would deal with the local Clerkenwell trades of jewellery and watch and clock manufacture. Smith’s comments on the nature of a polytechnic form a useful focus, as of 1892. He saw the name polytechnic applied in Germany and Switzerland to a scientific university, in which the highest instruction was given in pure science and its applications to engineering and other professions. The entry standard was very high and the nearest British equivalent institutions were then the Royal
College of Science, the Central Technical College and the Science faculties
of our universities. "The whole of the higher institutions in London
together", he considered, "will not bear comparison for equipment,
accommodation and standard with a single first class foreign polytechnic."
A London polytechnic institute Llewellyn Smith saw to be very different;
"an institute carrying out the double purpose of providing evening
recreation and education for persons of both sexes engaged in industry
during the day." For the benefit of the "poorer classes", these institutes
had been endowed by the Charity Commissioners on the basis of matching
private local funds. Of the two sides of the work of a polytechnic the
recreative and the educational, the County Council was concerned only
with the latter.

"It must be evident to anyone who considers the wants of London as a
whole with respect to technical education", wrote Smith, "that a certain
number of large and strong institutions are required to serve as centres of
influence for the various districts, gradually attracting within their sphere of
influence the disorganised classes at present scattered about London . . .
The schemes of the Charity Commissioners contemplate that the
polytechnics shall become such centres and their geographical arrange-
ment is on the whole admirably adapted for this end." In return for
representation on Governing Bodies, audit and inspection, Smith
recommended that polytechnics should each receive £1,000 per annum for
general educational work, £500 per annum towards the salary of Principal or
heads of departments and £500 per annum towards the maintenance of an
advanced department of applied science, bearing on some local industry.
The Board varied the actual amounts of these grants. Additionally there
should be grants for running day secondary schools in polytechnic buildings
and special grants for additional work. Provision of buildings did not come
within the terms of the Acts but equipment and apparatus did and should
be separately funded.

The importance of these proposals to the developing Northampton
Institute is readily apparent. Equally, the membership of the Technical
Education Board provides a linking thread between the Northampton
and the educational developments outlined in this chapter. Among the
personalities were: Sidney Webb, Quintin Hogg and Sir Philip Magnus and
the Board very early appointed William Garnett, then Principal and
Professor of pure and applied mathematics at Durham College of Science,
as Educational Adviser and Secretary to the Board.
Conclusion

In this chapter the development of the concept of the specifically British (even London) polytechnic has been traced from Besant, via Hogg, Armstrong and Silvanus Thompson to the origins of the Northampton Polytechnic Institute. From the outset the purpose of technical education has related to the needs of industry, but it should never be overlooked that strongly present in the polytechnic concept was the fundamental basis of a true university education, concern with the whole person. As to funding; its stemming from individual philanthropy, developing via the reallocation of corporate Christian charitable funds to growing public funding from taxes, local rates and the "whisky" money, displays the gradual modification of control leading to the first thoughts of co-ordination and rationalisation. We could also reasonably hold that certain of the same dedicated people in representing more than one of the bodies involved and assiduously attending meetings exerted an influence on technical education that has been greatly underestimated.
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