49359

Distr.
RESTRICTED

PPUD/WP/9
February 1964

ENGLISH

ECONOMIC COMMISSION FOR AFRICA
Workshop on the role of physical planning and urbanization policies in development
Accra, September 28–October 5

# EDUCATION FOR PHYSICAL PLANNERS: THE EVOLUTION OF A SYSTEM[1/]

1/ A paper prepared by Mr. G.B. Dix, M.L.A., B.A., A.R.I.B.A., M.T.P.I., of the Building Research Station.

64-3287

I. Introduction: the background to the practice of planning

1. Other papers of this workshop indicate the extent of the problems facing Governments of developing countries where physical, economic, social and cultural changes are taking place at an almost explosive pace. The national monographs indicating the particular problems facing specific countries will have shown that there is substantial agreement in the assessment of the problems before us.

2. As town and regional planners we are generally only directly concerned with our physical environment. This is considerably influenced by the economic, social and other policies of government and is, in fact, the translation into bricks and mortar of these policies. It may be well to remind ourselves of the work of LePlay, the French sociologist, who was amongst the first to teach the importance of the effect of environment on human activities and hence on man. His beliefs were given wider publicity by Patrick Geddes over 60 years ago in the trilogy, 'Place, Work, Folk' which he developed 'in terms of a philosophical formula and of a practical conception of the planning process'. He taught not only the importance of survey before plan but also that the implementation of the plan affected the facts of the survey and thus that these stages should be regarded as an integrated continuous process. He was, however, more concerned with encouraging the understanding co-operation of the ordinary citizen in the planning of his city than in the education of the expert.1/

3. Whilst appreciating that the planner cannot see his work become effective without sympathetic public support, it is not with this encouragement but with professional training that this paper is concerned. Only from a study of place, work and folk is it possible to determine the work to be done and the order in which it should be carried out. Knowing this, one may be able to assess the qualities and skills required of a country's physical planners. Many of the problems in the developing countries are similar to those met in older nations but their relative importance and magnitude is frequently very different.

---

1/ Report of the Committee on the Qualifications of Planners, Cmd 8059; (Schuster Committee), H.M.S.O. 1950, para. 12.

4. Possibly the most dramatic and certainly the most vital example is population change, at widely varying rates in different countries. Though this increase in England is greater than had been expected it is not too rapid. People are more prosperous, their diet is better, they benefit by developments in medicine and live longer and on the whole more comfortably. Typically, present day distribution of population by age groups may be 22 per cent under 15 years, 68 per cent between 15 and 64 and the remaining ten per cent 65 years of age and over.[1/] Roughly two-thirds of the population is thus of working age and this figure has increased by only six per cent over the past 200 years,[2/] though there has been a decrease of 11 per cent in those below 15 years of age and an increase of five per cent in those of 65 and over during the same period.

5. This may be compared with the situation in the developing countries[3/] where 40 per cent of the population may be under 15 years of age, about 55 per cent between 15 and 64 years and only about five per cent aged 65 or more. Medical progress and better living will inevitably lead to increase at each end of the scale before the middle section is affected, keeping alive people who might die in infancy or before reaching old age will increase the proportion of dependent population to those economically productive. In many developing countries population is increasing at the rate of four per cent or more per annum, thus doubling every 17 years and in several countries 50 per cent of the population is of school age or under.

6. Whilst population is increasing, household structure, too, is changing in that members of the same family are tending to require dwellings of their own instead of remaining in the family home. This involves a change in the size, type and number of houses required.

---

1/ United Nations, Determinants and consequences of population trends, New York 1953 table 23, page 145.

2/ The working age has of course changed during this period with the introduction of legislation against employment of child labour, and with the spread of compulsory education.

3/ Determinants and consequences of population trends, ibid, table 22, page 144.

7. At the same time there is a complete economic and social revolution in which emergent nations are suddenly being exposed to the full force of all the influences that elsewhere have been developing slowly since the industrial revolution. The older countries gradually changed from subsistence to cash economies and from being primarily rural to being primarily urban. Simultaneously they changed their educational and social systems, occupations and legal systems. The physical pattern and form of development was changed, unknowingly, to meet these changing requirements. At one time town planning was regarded as but one facet of architecture; nowadays physical planning is probably more concerned with the economic and social bases of the plan than with aesthetics, important though these are. To assist and, one hopes, take a leading part in the organization of our environment, first town planning and now regional planning have become recognized professional activities.

8. The growing complexity of planning practice in Britain this century can more readily be understood after glancing briefly at the controlling legislation.

9. The first Act of Parliament specifically mentioning planning was the Housing, Town Planning etc. Act of 1909, (which encompassed all that was felt necessary on this subject in 14 sections and two schedules)[1/] and the first Act establishing a ministry charged with responsibility for town and country planning reached the statute book in 1943.[2/] Now, although the separate ministry has vanished, in the latest Town and Country Planning Act, (1962), there are 226 sections, 15 schedules and innumerable statutory instruments, ministerial circulars and directions.[3/] The need for the co-ordination of economic and physical planning on a regional scale has been recognized by the change (in 1963) in the designation and responsibilities of the President of the Board of Trade to Minister for Industry, Trade and Regional Development, to perform this important function.

---

1/ D. Heap, Encyclopedia of Planning Law and Practice, Sweet and Maxwell, London, 1963, page 7.

2/ Minister of Town and Country Planning Act 1943 (6 + 7, Geo 6, c.5).

3/ Town and Country Planning Act, 1962. (10 + 11 Eliz 2, c.38). See also D. Heap, ibid, p.7.

10. There is one other trend in planning practice in Britain which, though fundamental, frequently receives insufficient emphasis, and concerns the basic philosophical approach to planning and the form which the plan takes. Under some of the earlier legislation[1] local authorities were given the option of preparing a detailed planning scheme which, once prepared, was very difficult to alter. The difficulty over alterations was a hindrance to progress and in fact deterred many authorities from preparing schemes. Under later Planning Acts[2] all authorities of a prescribed status, but responsible for the local government of the whole of Britain, are obliged to prepare development plans. These plans must be reviewed at specified intervals and may be reviewed at any other time should this be necessary.

11. This is a marked step forward for change can be catered for by review of the plans and by revisions to orders issued under the Planning Act by the responsible minister without amendment of the main statute. This is important as "in the ultimate analysis of town planning control depends (subject of course in a democracy to what Parliament has to say) on what the minister responsible for town planning thinks[3] ... it is therefore necessary to know, or try to know what are the policy considerations which weigh with the minister in wielding the devastating legal control over land-use which he now possesses".[4] In accordance with these principles development plans prepared under the 1947 and subsequent town planning acts indicate proposals in general terms only; the precise form of development permissible in any situation being found only by the submission of a planning application.

12. A plan never achieves finality, therefore, and hence, too, the planner's work is never completed, but is under constant review. It can always represent the latest ideas of good planning and can cater for any sudden or unexpected change in requirements.

---

1/ Town and Country Planning Act, 1932 (22 and 23, Geo.5, c.48).

2/ Since the Town and Country Planning Act, 1947(10 + 11 Geo.6, c.51) which became operative on 1 July 1948 (the 'appointed day').

3/ By virtue of Section 1 of the Minister of Town and Country Planning Act, 1943, ibid.

4/ D. Heap, ibid, page 7.

II. The development of planning education in Britain

13. This fluid approach to physical planning has been adopted as a result of experience over the first half of the century. Whilst professional techniques have changed and improved in this way there have been parallel developments in the field of planning education.

14. The first university chair of civic design in Britain was established in 1910, and in 1916 the Town Planning Institute published its first Instructions to Candidates. Examination subjects, by 1919, included the history of town planning, town planning practice, town planning in its relation to architecture and amenities, town planning in its relation to engineering and surveying and town planning in its relation to the law. In addition there was a one day programme involving the preparation of a sketch design and report.[1] The subjects of the examination were thus concerned with the aesthetic, structural and administrative aspects of planning. They reflect the original entry to the profession which, from its earliest days, came from amongst architects, surveyors and engineers, with a leavening of lawyers segregated into a special category of membership by the professional institute. Geddes, the sociologist, was regarded as a rebel and the exception who proved the rule of normal membership.

15. There were changes over the course of years but few of significance[2] in the present context until 1949 when there appeared the first references to economics and sociology as examination subjects.[3] Since then they have assumed greater importance and it has been stated that whilst

---

1/ On this and the history of planning education in Britain see J.S. Allen 'Educating the Planners', Journal of the Town Planning Institute Vol. 49, No.10, pp.361-367.

2/ The courses organized by the Association for Planning and Research for National Development, later the Association for Planning and Regional Reconstruction were notable exceptions to the generally unadventurous outlook.

3/ In 1949 two new papers were introduced into the Town Planning Institute's Final Examination syllabus. These were Outlines of Social and Economic Organizations and Elements of Applied Geology and Economic Geography.

'practically no branch of learning is completely irrelevant to planning',[1] 'training for at least two different professions is essential; one based on architecture, surveying etc. and the other on the social sciences'.[2] Even so, 'no one person, however competent he may be in a single or dual professional capacity, could be denominated a complete town planner'[3] 'for that paragon of professional virtues would need to be a superman. He should be a good economist, for only a profound and practical knowledge can serve as a basis for estimating loss and gain in the siting of industry and agriculture. He should know a great deal about geology and the limits it imposes on engineering, about water supplies, subsidence, soils and gradients. He should have an artist's eye for landscape and layout and an architect's sense of the possible. He should have a profound sense of history, combining a respect for the past with an abiding recollection that the greatest numbers are still unborn, and above all he must be capable, through experience and imagination, of putting himself in the shoes of those who are to live and work in the community for whose physical framework he may be responsible".[4]

16. It is with the appreciation of the enormous range of subjects affecting planning in mind that recent developments in planning education have taken place.

17. The position in Britain now is that though there are two university schools (Newcastle, Manchester) and three colleges of art (Birmingham, Nottingham, Leeds) with undergraduate courses, the majority of planners receive their professional education by either full or part time post graduate study. This year, 1963-1964, there were 62 entrants to full time undergraduate courses, 122 to full time post graduate courses and a larger number to part time post graduate courses.[5]

---

1/ Schuster Committee, ibid, para. 114.

2/ Schuster Committee, ibid, para. 117.

3/ Schuster Committee, ibid, para. 114.

4/ The Economist, London, 14th August 1948.

5/ A. Goss in a letter to the Editor, Journal of the Town Planning Institute, Vol. 50, No.2, pp.80-81.

18. Each of the philosophies of this professional educational dichotomy has its convinced adherents and perhaps where there are several schools in a country the apparent overlap may be a source of strength to planning.[1] In those countries where there is only one school it is essential to use each method of training to cover the whole front without the waste - or luxury - of duplication or overlap. One outlook recognizing physical planning as a professional activity in its own right supports the training of general planning practitioners who, after entering the university from school and studying for four or five years, emerge with their degrees, to gain two years office experience prior to election to membership of the professional institute. As with medicine, the specialists would appear later from amongst the general practitioners. After further studies they would work on specialized aspects of planning. This does not appear to have been the case in practice so far, logical though the idea may be.

19. The alternative is for graduates in geography, economics, sociology, architecture, engineering and other approved subjects to take a two year full time or three year part time course in planning, reaching professional planning status after gaining the requisite practical experience. Whilst many of these planners retain the background and outlook of the professions from which they originate and are probably mainly dealing as planners with the planning aspects of their original profession it is usual for their post graduate courses to train them in all aspects of planning. Generally, therefore, they do no really specialized study in the application of their own professions to planning, other than in thesis work or the occasional testimony of study.

20. This is a pattern of professional education built up as the result of experience over the past fifty years, changing slowly, somewhat reluctantly adding new subjects from time to time and dropping others even more reluctantly. Like the planning profession it has followed a pattern of gradual evolution matching the slow improvement in economic and social

---

1/ By providing planners with a variety of backgrounds, and by the varied research programmes conducted by the planning schools.

conditions of an established civilization. Since the war there has been more active participation of governments in the economic and social life of the country and there have been rapid technological developments. Mechanization, in industry and the home, has become ever more general, means of communication have improved and in particular there are many more vehicles on the roads in all countries.[1/] If the planning profession is to play the leading part which it ought to have at this time it is essential that the policies governing training and recruitment of planners be re-examined as a matter of urgency to deal with these new requirements and there are indications that this situation is now accepted.

21. The University of Nottingham has recently established a Department of Architecture and Civic Planning and intends 'to encourage a new approach to the education of architects, planners and associated professions and proposes to combine in the department opportunities for training, practice and research so that each of these activities is mutually helpful to the others, rather on the lines of a teaching hospital. The main objectives of the new department can be summarized as follows:

(a) To provide a practical as well as a theoretical training for architects and planners within the University by establishing a teaching office in the Department.

(b) To establish the right relationship in training between the various contributors to architecture and planning. This will involve close collaboration with other departments of the University and probably with other universities.

(c) To establish a centre for architectural and planning research through an Institute of Advanced Studies in Environmental Design. Priority might be given to the problems of the Midlands region, e.g. schools and housing, or regional planning in collaboration with the Ministry of Housing and Local Government and the local authorities.

---

1/ On traffic increases, and the planning consequences of it, see Traffic in Towns, Reports of the Steering Group and Working Group appointed by the Minister of Transport (The Crowther and Buchanan Reports) HMSO, London, 1963.

(d) To encourage an exchange of staff and students on an international basis.[1/]

22. Changes in the planning practice have thus been mirrored in the more varied and, one likes to believe, the better training of planners as professional experience and expertise have developed. This experience has not been gained on one side only, but by both the planners and their clients, the planned.

III. Some effects of urbanization in developing countries

23. What is the significance of these changes for the developing countries of Africa and the tropics generally?

24. Africa's development has accelerated, and the rate of progress is much greater than it ever was in Europe or America. There are so many new lessons to learn and they are so pressing that it is essential to benefit as far as possible from experience elsewhere. But this is not the same as blindly copying what is done in other countries. It depends instead on a careful analysis of cause and effect in the past. A study of present conditions may then lead to possible solutions to contemporary and future problems.

25. There seem to be several spheres in which particularly rapid change is likely. Firstly there is urbanization, induced by the development of both industry and agriculture. Agricultural development will cut across old systems of farming and land tenure. Farms will be bigger and mechanized, employing labour more efficiently. Combined with a more organized regional marketing system this will lead to the development of fewer but larger villages, facilitating the provision of water supply, drainage and electricity, and of schools, clinics and other social services. It will also lead to the breakdown of traditional tribal and family groupings and to their emergence into a civic pattern. Finally it will make possible easier and more efficient government.

---

1/ Journal of the Royal Institute of British Architects, Vol.71, No.1, January, 1964, p.28.

26. A similar, but less dramatic movement of people from the land took place in Britain many years ago when enclosures came and there was a drift to the town in search of employment. Fortunately this more or less coincided with beginnings of the industrial revolution and industry was frequently able to absorb many of the people no longer needed for agricultural employment. In a planned economy this inter-dependent and close relationship of urbanization and industry may be encouraged in the developing countries. It is not just a matter of having sufficient houses and employment available. A person coming to live in a town after his family has lived for generations in the country on a subsistence economy is coming to a new way of life. It is important that his house should suit his changed needs, that the community he joins is one in which he will be happy and that he should be made to feel a useful citizen with work and a place in society. This means that sources of employment must be carefully located in the best interests of the country as a whole and not just of one part of it or of one industry. This is a matter of regional and national planning and it is for this task that the brightest graduates must be recruited and trained.

IV. Planning education in the developing countries.

27. It appears from this survey that there will be considerable activity on three levels of development - at local or village level, at town level and at regional and national level, each of which is in its own way highly skilled and all of which require a sympathetically human approach. Training of planners for this work should be related to the particular task in hand. Any other course would be wasteful of the limited resources of skill and manpower available.

28. A number of specialist institutions have been established for the training of planners, many of whom will work at village and district level. This has provided an opportunity to form a valuable association between long established universities and developing ones in the new nations. For example, Yale University has been assisting in South America, Harvard University has provided staff for the planning school at Bandung

and the University of British Columbia has assisted in the establishment of the Institute for Community Planning at Kumasi.[1]

29. The course at the Institute of Community Planning is relevant to our present study. In 1959 and 1960 a number of manpower studies made in West Africa showed the need for short duration courses to train planning technicians for work at local level. In Ghana a report by Professor Peter Oberlander of Canada recommended the establishment of a self-governing teaching body working with an existing institution of higher learning. The Government of Ghana accepted the offer of the (then) Kumasi College of Technology to be host to the new institution which was established there in 1961.

30. The institution provided a two year course in planning to students having an entry standard somewhat lower than that required for the universities. The course dealt with geography, geology, local history, sociology, economics and public administration, as they are related to the physical improvement of human settlements. Students were instructed in and carried out practical work on social surveys, land surveying, landscaping and other techniques needed in the improvement of villages. The amount of detail included in the course seems greater than necessary for the immediate work in hand, but in the author's experience the end product was eminently satisfactory and the students retained, and in fact increased, their enthusiasm and professional ambition during their years of study.

31. The idea was that these students should work under the general direction of a fully qualified professional officer in the preparation of village plans, the location of which would be determined in accordance with the over-all national and regional plan for the country. They would thus fill in the detail within the framework prepared jointly by economists, sociologists and other regional planning experts.

---

1/ P. Oberlander, "Education for physical planning - a pump priming process", Journal of the Town Planning Institute, Vol.50, No.1, p.18.

32. Essential in any scheme of this sort is the provision of facilities for promotion. It is evident that although skill is required to become a successful village planner, the highest positions in the planning profession in a country will ultimately be held by those with full planning qualifications and probably working at regional or national level. It is therefore necessary to budget in manpower and money for a certain number of these planning technicians to receive further training to allow them to move into the regional organization.

33. Whilst the general size of villages will tend to increase and their numbers decrease with progress in agriculture and industry, there will be a similar but more marked movement in town development. In form and outlook many towns in developing countries are now really very large and somewhat overgrown, unwieldy and inconvenient villages. As well as increasing in size they will change in character and assume a more urban form. It is with these changes in urban development that town planners will be concerned in the next decades.

34. The conventional approach would be to train general town planners on a full time undergraduate or possibly a part time post graduate course. It is suggested that an alternative, and perhaps more useful, method would be to train increased numbers of architects and to include a much larger element of town planning and urban design in the architecture course. In one move this would provide specialist urban designers able to plan both the towns and the individual buildings in them. Change in the design of either consequent upon improving standards of living and the adoption of new ways of life could then be readily reconciled to each other. With the assistance of sociologists and economists it should be possible to overcome the difficulties often met where two aspects of the same problem have been dealt with in very different ways by architects and planners trained mentally (if not physically) in isolation from each other and who frequently lack the necessary sympathy with the aims and methods of their fellow professionals.

35. There is one important consideration which follows from the acceptance of this method of training. It is evidently impossible to combine

in one person all those qualities and all the experience which are ideally desirable in a town planner. To expect planning to be carried out by an architect in addition to the practice of architecture of the experimental nature to be found in the tropics is even more hopeless. Some limit must clearly be set on the task before him and this may be done by confining it to the detailed planning of the physical development of the urban area itself. The work of the regional planner would in consequence include the location of elements in the urban region as well as the over-all regional planning policy and administration.

36. Entry to the course leading to the architectural qualification would remain at the normal university entrance level. The duration of the course need not be increased to any considerable extent by this planning specialization, for in most courses there appear to be a number of superfluous subjects which could be omitted or reduced in importance without much practical loss.

V. Proposals for courses in regional planning

37. There is, in the developing countries, a unique opportunity for each to be planned in the best interests of the nation and in accordance with the policies of Government. To do this successfully it is essential that the necessary regional planning staff should be of the highest calibre and have received the best possible training. Where the provision of new or extended training facilities is being considered it is suggested that there might be a two year post graduate course[1/] open to selected holders of degrees in economics, sociology, geography, architecture, engineering, public administration and law. The object of the course would be to train regional planning specialists, each highly skilled in the application of their original professions to the planning process.

---

1/ The original scheme forming the basis of this syllabus was evolved by G.B. Dix, of the Building Research Station, Garston, jointly with Professor V.N. Prasad, of the Indian Institute of Technology, Kharagpur and Mrs. Gwen Ward, now of the School of Planning, Nottingham College of Art and Crafts. Their assistance is gratefully acknowledged.

38. During the first year of this course the students would work together on combined programmes, the architects, geographers and engineers concentrating on the social sciences and administration whilst the sociologists, economists and administrators concentrate on geography and the design subjects. This should demonstrate the extent and the limitations of the contribution that each profession can make to the physical planning process, and help communication between the professions. It is not intended to make members of one basic profession proficient in the work of a second one.

39. Equally important in this first year is the opportunity presented for people of several professions and a variety of interests to work together in a group with a single objective. It is essential for the successful outcome of the course that there should be in any one year a sufficiently wide range of professions to achieve this admixture and that there should be adequate opportunities to practice inter-disciplinary co-operation.

40. During the second year of the course students would undertake a limited number of programmes working principally on the contribution of their own profession to group schemes. The annex indicates a suggested arrangement of the syllabus and studio work. As the course would be conducted on a seminar basis rather than by formal lectures it would be possible quite readily to vary the content of the course to meet the requirements of the students at any particular time. By judicious arrangement of lectures into concentrated groups it should be possible, academically and economically, to introduce specialist lecturers from abroad to conduct seminars, lead design programmes and increase the depth of experience generally. Students taking this course would be selected from graduates with good degrees and should be able to contribute to the practical planning process during their graduate studies. This would require careful arrangement of studio work in co-operation with regional and national planning officers.

41. Whilst it may be possible to establish special independent institutions for the training of planners at village level it is essential that

courses for regional planners should be at a university or similar institution. There they would have the opportunity of meeting students in many other disciplines. Whilst resources are limited it is important that the best possible use should be made of them.

42. As a result of the recommendations of a United Nations mission[1/] a research group was established at Kumasi in 1959 to study planning and environmental design, forming a useful link between academic life and the planning programmes in the country whilst giving assistance to both. It also provided an opportunity to introduce senior students to practical work. The idea of this group seems eminently worthy of emulation elsewhere, as does a second Kumasi experiment. The agreement between the Faculty of Architecture at Kwame Nkrumah University of Science and Technology and the Architectural Association further develops the kind of association between new institutions and established ones to which attention has already been drawn. In this case provision is made for staff and student exchanges and for the pooling of information and experience, particularly with the Association's Tropical Department.

43. It may be possible in other cases to have some design programmes in common with planning schools abroad where the climate and conditions are dissimilar. Exchange of the schemes produced would illustrate the variation in solutions necessary to meet the requirements of different cultures in different stages of development and the effect of quality and availability of materials.

## VI. Conclusion: the future of planning

44. The limited history of planning practice in the developing countries makes it highly desirable that planners of all nationalities should meet from time to time to discuss mutual problems and share the benefits of experience and research, as they do at meetings such as this. This workshop is mainly concerned with the formulation of planning policies and the administration of planning. It has been the purpose of this paper to demonstrate how planning administration has developed in the United Kingdom and how important is the training of planners in adequate numbers and with the right skills to administer the planning machine.

---

1/ United Nations, Report of the United Nations Housing Mission to the Gold Coast, (TAA/GOC/1), New York, 1955.

45. When the Town Planning Institute was formed in London fifty years ago it had 64 members. There are now 3,345;[1] yet despite this rapid growth it has been estimated that at least 2,000 more planners are required in Britain alone.[2] The demand for them is likely to rise more rapidly in the developing countries and it is therefore essential that training facilities should be developed as soon as possible. Even by immediate action planners could not be produced in any quantity in less than three or four years' time. After that it will be necessary for them to gain experience in subordinate positions before they are able to assume senior and responsible appointments.

46. It is impossible to have a limited amount of planning; it is either accepted or it is not, for there can be no half measures. In the view of most people at the present time it is a national necessity in all countries, and the emergent nations have a unique opportunity now to start their development in accordance with properly produced plans.

47. Legislation will be necessary and plans must be drawn up. If because of staff shortages the plans are not produced and the regulations cannot be enforced planning will fall into disrespect. The situation will then be rather worse than were there no planning at all, and a unique opportunity will have been missed. Planning law must be a positive guide to development, and for the newer nations with their staff shortages, should be practical and simple.

48. Almost everywhere there is a shortage of qualified planners. Well qualified staff for planning at all scales could be produced by the adoption of a training system similar to that described in this paper. Subject to control by the normal democratic processes the planners should be given the opportunity to demonstrate the advantages which their profession can bring to the future development of their countries.

---

1/ A.R. Potter, 'The History of the Institute', Journal of the Town Planning Institute, Vol.59, No.10, pp.368-376.

2/ Recruitment and Membership, report of a special committee under the chairmanship of L.W. Lane, Town Planning Institute, London, 1963.

ANNEX

SYLLABUS FOR A TWO YEAR GRADUATE COURSE IN REGIONAL PLANNING

A. Lecture courses and seminars

The order and relative importance of particular subjects to be assessed when the previous qualifications and experience of students is known, and in the light of programmes of research and practical training.

1. Environment

(a) Natural factors: weather, climate, land forms, vegetation rivers, lakes. Option for geographers

(b) Population and settlement patterns: agriculture, industry trade, transport, administration, and their role in changing the settlement pattern; industrial location; the forms and functions of settlements and the relation between them; urbanization.

(c) The city: the idea and purpose of the city; the city in history, its characteristics; architecture in time and space; social theories and ideal cities; aesthetics, style and fashion; studies of selected cities.

2. Resource and industrial development

(a) Water: sources of supply, availability, consumers requirements; quality and treatment.

(b) Agriculture: subsistence and cash economies, local crops and methods, new crops and methods, mechanization, distribution and marketing, agricultural industries; fishing output from river and sea, location of fishing ports and industries.

(c) Forestry: water and soil conservation, timber, other forest products, commercial prospects, planting programmes, associated industries, employment, forest reserves, legislation.

(d) Minerals: type, quantity, distribution, commercial and industrial potentialities, capital requirements and contribution, effects on the communications pattern, processing, marketing.

(e) Power: present output by type, future requirements; production and distribution, capital requirements, effects on communications.

(f) Manpower: labour classified by industry and occupation, organization and training, factors affecting the supply of and demand for different types of labour, effects of urbanization, immigration and distribution, female employment.

(g) Industry: Different ways of classifying economic activity; technical and economic factors affecting the size of establishment; economies of scales, internal and external economies; locational requirements of different industries; stages of economic growth and consequences for planning; industrial linkages and groupings.

3. Survey techniques

(a) Topographic survey: survey techniques, note books, sketch plans requisite degrees of accuracy.

(b) Photogrammetry and photographic interpretation: vertical and oblique air photography in the study of land form and settlement pattern, map making from air photographs.

(c) The use of statistics: the uses, limitations and pitfalls of statistics; sources of information, statistical methods, averages, rates, indices, numbers, distributions, correlations, tests of significance, presentation, punch card and

mechanical analysis, reference to statistics in general use in planning, useful degrees of accuracy.

(d) Weather: collection, recording and presentation of significant data.

(e) Land use: scale, detail, classification, interpretation for planning purposes in town and region, notation and presentation. Other surveys of physical conditions.

(f) Social survey: social survey and sampling techniques, measurement of social requirements in town and region, family structure, education, health and recreation provision; accuracy of the surveys.

(g) Communications, agriculture, industry, etc.: surveys for special requirements; assessing the need for the survey, traffic density, origin and destination, forestry and forest types, livestock breeding, types of farming, routes to markets, manpower location, distribution of employment etc. as required.

(h) Presentation of survey information: use of tables, graphs, charts, maps, models of different types; choice of scale; the purpose for each presentation, degrees of accuracy, reproduction techniques.

4. Design and construction

(a) Town design: solid and spatial relationships, significant aspects, e.g. size, scale, sequence, enclosure; factors affecting design, theories of design. Application of principles to component areas of a town. Building in rural areas.

(b) Landscape design: factors in design; use, climate, ecology, soil, topography, economy, aesthetics, afforestation; the location of towns, buildings, roads in the landscape, analysis of design theories.

(c) Engineering construction: highways, railways, canals, airports, power; location surveys; elementary structural requirements; lines of vision, curves and gradients, bridges, drainage, earth-working. Option for civil engineers.

(d) Building construction: site selection and survey, services, sources of information; buildings in relation to sites. Materials; types of structure and their influence on design.

5. Administrative techniques

(a) Public administration: Government and civil service; national, regional and district organization, principles; statutory undertakings, the carrying out of public works programmes.

(b) Law: sources; tribunals, statutes, contract, tort; law of property, of land tenure, of forests, building, housing, factories, mines, public health, planning. Outline of planning law in other countries.

(c) Finance: methods of financing development projects (including agriculture), subsidies, loans, grants in aid, private and public financing, valuation of property, compensation and betterment.

(d) Building economics: costs of building by different structural methods, the balancing of capital and recurrent costs, economics of alternative methods of layout and development, effects of intensity of land use on costs of development in use, effects of statutory requirements on costs.

(e) Programming: consideration of all the elements in the plan; reconciliation of competing claims on available resources, the translation of proposals into a logical sequence of physical development, the use of the critical path method, Programme Evaluation and Review Technique (PERT); use of computers in programming.

6. Planning techniques

(a) Preparation of the plan: selection of surveys, scale and detail required, preliminary work, zoning, standards, densities, circulation, statutory procedures, site selection, programming.

(b) Elements of the plan: regions, sub-regions, special development areas, new towns, urban areas, comprehensive development areas, neighbourhoods, their selection and definition of limits, heirarchy of places.

(c) Plan presentation: reports, maps, diagrams, models, submission of plans to committees, and for display and appeal. Organization of the planning office for efficient working.

B. Studio programme of planning studies and major reports

1. First year

(a) Preliminary studies

(i) Field notebook: site study and submission of field book, notes.

(ii) Architecture study sheet: elements of design and construction (lecture course IVd). Option for architects

(iii) Engineering study sheet: elements of design and construction (lecture course IVc). Option for engineers

(iv) Landscape and town design study: elements of landscape and town design (lecture courses IVa and b).

(v) Interpretation of maps and plans.

(vi) Interpretation of statistical data.

(b) Village development scheme: simple survey and plan involving readily comprehensible physical, economic and social elements.

(c) Town plan:

(i) Survey of land use: age and conditions of buildings; density and accommodation, journey to work; utilities; traffic, industry, etc. Group project

(ii) Analysis: sieve maps and report of survey.

(iii) Town map: preparation of proposals and report.

(iv) Programme map: preparation of programme, phasing and report.

(d) Thesis: The synopsis for the final year thesis to be submitted and approved before the end of the First Year.

2. Vacation Summer courses, practical experience, collection of thesis material.

3. Second Year

(a) Regional plan:

(i) Survey of Topography, Agriculture, Industry, population, mineral resources, communications, public services, climate, land use. Group project

(ii) Analysis: sieve maps and report of regional survey.

(iii) Regional map: Preparation of regional proposals and report.

(iv) Programme map: Programme, priorities, report.