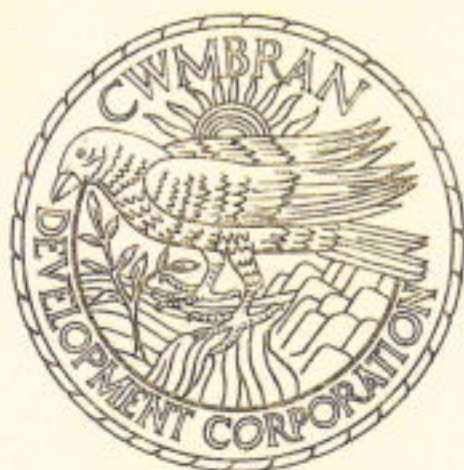




CWMBRAN NEW TOWN

A PLAN PREPARED FOR
THE CWMBRAN DEVELOPMENT CORPORATION

BY

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THE CWMBRAN DEVELOPMENT CORPORATION

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FOREWORD

On the 4th November, 1949, an area of 3,160 acres in Monmouthshire around Cwmbran, Pontnewydd and Croes-y-ceiliog was designated by the Minister of Town & Country Planning as the site of a New Town of 35,000 population. The Cwmbran Development Corporation was set up on November 24th, 1949, charged with the duty of developing the town and providing housing with proper social and commercial facilities, mainly for those employed in the existing and proposed industry sited in the valley between Newport and Pontypool.

The designated area already contains a population of some 13,000 and manufacturing industries employing over 6,000. The principal problem, therefore, has been to envisage how the existing development—about one-third of that proposed for the New Town—may, with the minimum of disturbance, be combined with the new development so as to create economically a convenient, safe and attractive town.

There are many difficulties to be overcome, caused by lack of planning in the past, obsolete buildings and abandoned claypits, whilst engineering problems arise from the fact that a river, a canal and two separate railway lines run from north to south through the area often in close proximity to each other. On the other hand, the setting is in most pleasing scenery, which gives much scope for imaginative and attractive treatment. The task before the Corporation is, therefore, one of absorbing interest.

The Corporation consists of members of widely differing experience, so that the approach to the many problems that have arisen has been a broad one.

In March, 1950, the firm of Minoprio & Spencely & P. W. Macfarlane were appointed as Planning Consultants. The Corporation, in making this appointment, was influenced by the experience in town planning of the members of the firm and also by the fact that Mr. Minoprio had recently completed the Master Plan of Crawley. The confidence felt by the Corporation in making this appointment has been fully justified.

The Plan and Report now submitted by the Planning Consultants indicate the proposals for the zoning of, and the principal communications within, the designated area, together with the acreages, populations and densities recommended, and for certain ancillary proposals outside the designated area which are considered necessary for the proper development of Cwmbran.

The Plan proposes seven residential areas, each with its own neighbourhood centre, linked together by a road around the hill of St. Dials and by new bridges over the canal, railway lines and river. Most of the housing is on the higher ground, while the town centre and the principal industrial and recreational areas are on the flat plain in the centre of the valley. Important groups of public buildings are proposed at the north and south ends of the main shopping street and on the western slopes of Croes-y-ceiliog, where an educational campus of four secondary schools is planned.

The Master Plan as now submitted has the full approval of the Corporation. It has been produced after numerous meetings with the Corporation and its officers and consultations with officers of the Ministries, local authorities and local industrialists. Full consideration has also been given to the opinions of the local people expressed at public meetings held in the area.

Cwmbran is the first New Town in Wales & Monmouthshire. Within the framework of this Master Plan it is hoped will be created a happy, friendly and pleasing place which will set a standard of what an industrial town should be.

T. H. HUXLEY TURNER,

Chairman.

March, 1951.

ACKNOWLEDGEMENTS

We should like to acknowledge gratefully the assistance and co-operation we have received from the members and officers of the Cwmbran Development Corporation; from the officers of the Monmouthshire County Council; the Cwmbran Urban District Council and the Pontypool Rural District Council; from the officers of the Ministries of Local Government and Planning, Transport and Health in England and Wales, the Board of Trade and British Railways (Western Region). Local industrialists and the General Public within the designated area have also been most helpful in many ways. For our preliminary study of the problem we were fortunate in having an admirable series of survey maps prepared by the staff of the County Planning Officer to the Monmouthshire County Council, Mr. JAMES KEGIE, A.M.T.P.I., A.R.I.C.S., A.I.A.S.

Finally, our thanks are due to our own staff including particularly Mr. D. F. TANDY, A.R.I.B.A., A.A. (HONS.) DIP., F.R.S.A., who has been responsible, under our direction, for the preparation of both the Master Plan and the Draft Outline Plan and Mr. A. J. MELLOR, A.R.I.B.A., DIP.T.P., Mr. J. L. GREENWOOD, A.R.I.B.A., Mr. I. D. OWEN, A.R.I.B.A., Mr. M. D. PEDLEY and Miss MARY BRIDGER.

ANTHONY MINOPRIO.

HUGH G. C. SPENCELY.

PETER W. MACFARLANE.

March, 1951.

I. THE DESIGNATED AREA

LOCATION.

1. Cwmbran—"the valley of the crow"—lies in the Eastern Valley of Monmouthshire, approximately five miles north of Newport and four miles south of Pontypool. The total area of land covered by the Designation Order amounts to 3,160 acres—nearly five square miles—of which 2,550 acres are within the Urban District of Cwmbran and the remaining 610 acres within the Rural District of Pontypool.

GEOLOGY.

2. Surface geology comprises, in the main, red marl of the old red sandstone series used locally for brickmaking. There is a small trace of river gravel at the north on which the village of Pontnewydd is built.

CONTOURS.

3. The site occupies the wide slopes of the lower Afon Lwyd valley, the contours varying from 125 ft. A.O.D. at the south-east to 600 ft. along the north-western boundary of the designated area. A prominent feature in the centre of the site is the hill of St. Dials which rises to a height of 400 ft.

POPULATION.

4. The population of the area is about 13,000 most of whom live in the two large settlements of Cwmbran and Pontnewydd and in smaller ones at Croes-y-ceiliog, Llantarnam, Oakfield, and Upper Cwmbran. About 4,000 people are living in areas of obsolete development or layout.

INDUSTRY.

5. Cwmbran is popular with industrialists because of the availability of suitable sites and of good road and rail communications. There are twenty factories in the designated area, mostly sited near the railway lines and employing over 6,000 workers of whom three-quarters are in the metal and engineering industries. Employment for local workers is also provided outside the area at Panteg Steelworks, British Nylon Spinners (Mambhilad), and the Royal Ordnance Factory at Glascoed. Owing to the shortage of houses in the locality, many of the workers in Cwmbran Urban District travel more than five miles daily to their work; the elimination of the many problems arising from the present excessive travel-to-work is one of the objects of the new town.

DERELICT LAND.

6. There are large areas of derelict land, sites of abandoned claypits related to the brick works and old colliery workings: these sites are, however, capable of reclamation for open space or other purposes.

AGRICULTURE.

7. The remainder of the designated area comprises agricultural land, mainly utilised for dairy farming, and small scattered woodlands. There is no land of first-class agricultural importance involved in the new town project, the whole area being classified as medium quality farmland in category 6 AG.

THE RIVER AND THE CANAL.

8. The Afon Lwyd, which here follows a winding course through the flat land in the middle of the valley, is a fast flowing river liable to periodic flooding and pollution by industrial wastes. A flood prevention scheme, including the removal of silt and stones from the river bed, will be necessary to make the adjoining meadows available for use as playing fields.

9. The Monmouthshire and Brecon canal, now disused for navigational purposes, passes through the area from north to south.

ROADS.

10. The principal approach to the site is the Newport-Abergavenny Trunk Road, A.4042, which passes along the eastern boundary of the site and connects with the internal Cwmbran-Pontnewydd road system at Llantarnam by means of route B.4244, by a Class III road at Croes-y-ceiliog leading to Pontnewydd, and by a second road following the northern boundary of the area to Pontrhydyrun.

BRIDGES.

11. Within the designated area the majority of the bridges and railway underpasses are inadequate, either in width, height, or carrying capacity. Extensive reconstruction will be needed in most cases to bring them up to the standards required for the new town.

RAILWAYS.

12. Two railway lines pass through the area, the Monmouthshire Eastern Valleys line and the Hereford-Newport main line. These lines are linked at Cwmbran station by the Cwmbran Branch line. In all, there are four railway stations within the area: Llantarnam Junction, Cwmbran, Upper Pontnewydd, and Pontnewydd.

WATER SUPPLY.

13. Cwmbran Urban District obtains its water supply from the uplands of Mynydd Maen to the north-west of the area and supplements this from the trunk main supplying Newport County Borough. To the eastern portion of the designated area administered by the Pontypool Rural District Council, water is supplied in bulk by the Pontypool Gas and Water Company. Newport's water engineer and the Welsh Board of Health confirm that ample additional supplies will be available from this source to provide for the increased population.

SEWERAGE.

14. The existing disposal works near Llantarnam Abbey are barely sufficient for the present needs of the Urban District, and the new town will depend upon the trunk sewer which is now being laid by the Eastern Valleys Joint Sewerage Board down the Afon Lwyd valley, with an augmented treatment works at Ponthir.

SURFACE WATER DISPOSAL.

15. The whole site lies in the one drainage area of Afon Lwyd with two subsidiary streams, Cwmbran Brook and Nant Dowlais. The area will drain by gravitation to the south-east of the perimeter.

GAS.

16. A new gas works has been constructed by the Wales Gas Board at Griffithstown, Pontypool, which, with the new grid main to serve the eastern portion of South Wales, will provide an ample supply for the new town.

ELECTRICITY.

17. The South Wales Electricity Board's grid covers the area and no difficulty is anticipated in meeting all the requirements. Some of the cables now carried overhead on pylons should, in due course, be relaid underground wherever they are likely to interfere with the new development. Other sections are being diverted to the west of the designated area.

GREEN BELT.

18. The Development Corporation have planning control over a "green belt" approximately one mile deep outside the designated area's boundary so that the town is safeguarded against inappropriate development in the vicinity. To the north, between Pontnewydd and Griffithstown, this green belt is reduced to a narrow strip of open country only about one third of a mile wide.

CONCLUSIONS.

19. The site proposed is geologically suitable for a new town; it is conveniently situated in relation to existing and prospective sources of employment; has excellent road and rail communications; has public services which are capable of expansion as required; is large enough to house the required population with all necessary amenities; and finally, its use for a new town will not impinge upon agricultural land of the highest quality.

II. THE ROAD PLAN

TYPES OF TRAFFIC.

20. There are three main categories of traffic with which the roads in and around the new town will have to deal:—

- (a) The long distance and inter-town traffic which has no business in Cwmbran and therefore wishes to by-pass the town. This traffic will be served by the Newport-Abergavenny trunk road on the eastern boundary of the area. This road enters for both fast and heavy traffic: frontage development is prevented wherever possible and access restricted.
- (b) Traffic wishing to enter Cwmbran to reach industrial, commercial, and residential areas. This traffic will be served by a number of main roads entering the area and circulating within the town, these routes being planned to link together the various zones and pass between rather than through them. They will be designed to permit rapid movement with safety: both frontage development and access will normally be restricted.
- (c) The purely local traffic moving within the industrial, commercial, and residential areas. This traffic will be served by minor roads whose primary purpose is to open up and serve development: these roads should, therefore, be deliberately designed to discourage fast movement. Only the more important of these development roads are shown on the Master Plan to illustrate the principles recommended: their precise location is a matter for site planning in detail.

THE TRUNK ROAD.

21. Owing to the contours of the Eastern Valley, the "pull" of Pontypool and Newport and the absence of any nearby community to the east or west, the main traffic streams in the Cwmbran area are between north and south. The Newport-Abergavenny trunk road (A.4042) which passes through the eastern fringes of the designated area at Croes-y-ceiliog, carries the bulk of the north-south inter-town traffic and will also be the main approach to the new town of Cwmbran. For most of its length the present road is adequate for existing traffic but a number of alterations are proposed by the Ministry of Transport and the Monmouthshire County Council in the neighbourhood of the new town. These include some minor improvements of the road line, the new bridge at Llantarnam, and an important $1\frac{1}{2}$ mile diversion to the east at Croes-y-ceiliog in order to keep the cross country traffic on the trunk road away from the residential development in this area. When this diversion is completed the trunk road will lie outside the built-up areas of the new town except for two short stretches at the south-east at Crown Road and Llantarnam Village.

22. At three points the land enclosed by the new diversion (i.e. lying to the west of it) is not within the new town designated area. It is suggested that these three areas should be designated so that they can be included in the residential development at Croes-y-ceiliog.

THE TOWN'S ROAD SYSTEM.

23. We consider that the new town's road system calls for the provision of at least the following:—

- (a) Convenient northern and southern approaches leading off the trunk road and connected to the main internal traffic routes.
- (b) A link with the Caerleon Road.
- (c) Main roads within the town designed to knit together residential, commercial, industrial, educational, and recreational areas, and provide convenient, safe, and rapid communications between all parts.
- (d) New bridges, viaducts, or underpasses to overcome the barriers of the railway lines, river and canal, and link together the east and west sides of the town.
- (e) Development roads within the residential, industrial, and commercial zones.
- (f) A central bus station, located with special reference to the industrial areas, the main shopping centre, and the educational campus.
- (g) Ample and well-distributed car parks.

24. The framework of the road plan which we propose to meet these requirements is essentially simple. It consists of a loop off the trunk road, forming a main north-south route through the town, a ring road around St. Dials, and two roads linking Croes-y-ceiliog with the town centre, one of which is also joined to the Caerleon Road.

CWMBRAN DRIVE—THE SOUTHERN ENTRANCE TO THE TOWN.

25. The present approach to Cwmbran from the south is through the village of Llantarnam and along Llantarnam Road: there are serious objections to the retention of this route as the main southern entrance to the new town. The greater part of the frontage from Llantarnam to Cwmbran is lined with housing, much of which is architecturally of poor quality. The road itself is narrow and to widen it would be expensive, involving the acquisition and demolition of numerous properties which could not be contemplated for many years. Even if this work were done, the frontage development would remain as ugly and dangerous as it is now.

26. It is desirable that an important traffic route should, as far as possible, be kept away from residential development and we therefore propose the construction of an entirely new and more direct approach to the town. This new road, called Cwmbran Drive on the Master Plan, leaves the trunk road near the Three Blackbirds about half-a-mile southwest of Llantarnam village, and runs northwards along high ground giving a fine view of the new town. The road follows the line of Ty-coch Lane without splitting the farm units, until it reaches Ty-coch Farm and then runs parallel to the railway line through the Oakfield housing estate. It is unfortunate that here the road has to pass between the existing houses, but we suggest that this disadvantage should be accepted as a short term policy in view of the other advantages over alternative routes through Oakfield. At a later stage, it may be possible to remove the houses lying between the new road and the railway line so that the whole of the Oakfield residential development would lie to the east of the new road.

27. At a point between Oakfield Road and Grange Road the new road will be connected to a ring road or parkway running eastwards past the Oakfield Steel and Wire Works. Cwmbran Drive will thus provide not only convenient access to the town centre and to the industrial areas but also to the whole of the south-west and western residential areas containing a population of over 12,000 people.

28. The Corporation's Chief Engineer confirms that both the junction at the Three Blackbirds and the proposed route are quite feasible.

29. An alternative route for the southern section of this new road has been suggested by the County Surveyor. This would leave the trunk road further north, near the entrance to Llantarnam Abbey, and follow the western bank of the Dowlais brook as far as Ty-coch Farm. This route has attractive possibilities for the development of a parkway, with weeping willows planted along the brook: its junction with the trunk road would also be simpler than that required at the Three Blackbirds. Against this, the route would not give distant views of the new town, is less direct and has the disadvantage of breaking up three farm units. On balance, we consider the Three Blackbirds route is the better of the two and we therefore recommend it.

PONTNEWYDD DRIVE—THE NORTHERN ENTRANCE TO THE TOWN.

30. A convenient entrance to the town from the trunk road at the north is clearly necessary. We do not favour the idea of making this approach through the Croes-y-ceiliog residential area for three reasons:—

- (a) The proposed road will carry heavy transport going to Cwmbran industries and this kind of traffic should be diverted from residential areas.
- (b) The contours in the northern half of Croes-y-ceiliog are not particularly favourable for a new road linking the trunk road with the bridge at Lower Pontnewydd and there is a good deal of existing development to be avoided.
- (c) To afford the maximum convenience the link between the trunk road and the new town should lie wholly to the north of the proposed development.

31. We therefore propose that the new road, which might be named Pontnewydd Drive, should branch off the Griffithstown-Pontrhydyrun road at a point 200 yards north of the Pontrhydyrun roundabout and run north-east to the trunk road passing under the railway line and over the river. The suggested junction with the trunk road might be made near the garage 500 yards north of Hollybush (level 342 ft. A.O.D.). This road will run diagonally

across the contours and provide a convenient and attractive approach to all parts of the town. The route has been examined by the Corporation's Chief Engineer who confirms that the gradients are reasonable and the proposal quite practicable.

GRANGE ROAD.

32. Grange Road, and its northern extension Avondale Road, form the spine of the town's road system providing the principal channel for the north-south movement of traffic and serving the two main industrial areas and the town centre. This road will require to be widened for the whole of its length and proper provision made for lay-bys for buses. The existing underpass below the Cwmbran Branch Line is narrow and will have to be rebuilt to take the future traffic on this important road. If double decker buses are to be used it will be necessary to lower the roadway.

THE PARKWAY.

33. Just as Grange Road and Avondale Road will provide for north-south movement to and from the centre, so provision must be made for traffic moving between the east and west sides of the town and the central area. The existence of the 400 ft. high hill of St. Dials makes it impracticable to construct direct routes from Greenmeadow and Coedeva to the town centre. We therefore recommend, as the best alternative, a circular road around St. Dials placed as close in as the contours and existing industrial development permit.

34. We suggest this road should be developed as a parkway passing between rather than through the residential areas, with no frontage development, restricted road access, and careful landscaping merging into adjoining woods and open spaces.

35. The two main purposes of the parkway would be :—

- (a) To provide the necessary main traffic route linking the western and south-western parts of the town with the central area, the industrial areas, the educational campus, and the east side of the town.
- (b) To knit the town together by providing the shortest possible route for safe and rapid circulation around the town, by-passing the built-up areas.

36. The route proposed for the parkway is one which causes little disturbance to existing development, and for the greater part of its length the gradients are reasonable and present no engineering difficulties. It would be surprising in an area such as Cwmbran if no difficulty with contours were to be found at any point and it is recognised that the rough nature of the ground in Church Wood and Pontnewydd will add to the cost of this section of the road. Nevertheless, the Chief Engineer, who has made a preliminary survey here and of the crossing at Forge Hammer, confirms our view that the construction of a road on this line is quite practicable.

37. At Forge Hammer it is proposed that the ring should cross Woodside Road and the railway line by an underpass, with a bridge over the canal.

38. As the volume of traffic using the parkway generated by the population of Coedeva, Greenmeadow and St. Dials is not likely to be great, the carriageway may not need to be more than 24 ft. in width, but the treatment of the road should be spacious, with attractive planting of shrubs and trees in wide grass verges. If a cycle track is considered desirable, as it might be, this should preferably not run strictly parallel with the carriageway nor always at the same level; it should be separated from it by a grass verge and trees.

39. Wherever possible the landscaping of the parkway should blend with that of the adjoining residential areas and make full use of existing natural features such as woods, streams, or clumps of trees. Where the parkway joins open spaces such as the Greenmeadow and Springvale secondary school sites, the Garden of Remembrance, Springvale Park, or the canalside gardens at Oakfield and Forge Hammer, the treatment of lawns, shrubs, and trees would be designed to create the effect of a continuous park through the town.

AN ALTERNATIVE TO THE PARKWAY.

40. It has been suggested to us that instead of this parkway an outer ring road should be planned linking together the local centres of the outlying neighbourhoods, this road being fully developed along its frontages and forming the bus route through the residential areas. We are strongly opposed to any attempt to combine in one road the two entirely different functions of opening up housing development and providing for cross-town traffic movement.

With such a road motorists wishing to cross the town to reach the centre or the northern or southern industrial areas would be encouraged, indeed compelled, by the road pattern to drive most if not all the way within the residential areas with housing on both sides of the road. The route would be considerably longer, the safe speed appreciably lower, and the appearance of the road—however good the architecture of the adjacent houses—would surely be less attractive than that of the parkway which we have suggested.

41. In view of the appalling record of road accidents in England and Wales, safety must be considered a major objective in designing the road plan. We believe that roads can and should be designed so as to reduce accidents. The bad old idea that roads should be paid for by lining them with buildings is directly responsible for the quite unnecessary deaths of literally thousands of people: we believe that the road system in Cwmbran should be planned with the purpose of every road clearly in mind, whether it be to serve the housing opening on to it or to enable traffic to get quickly and safely about the town.

42. The actual volume of traffic likely to use the roads under discussion will probably be small but this does not invalidate the general principle of designing the roads according to their function with road safety always in mind.

43. We consider that the motorist wishing to cross the town should be induced by the design of the roads to drive slowly through the residential area, where frontage development increases the risk of accident, until he reaches a main traffic route, such as the proposed parkway. Here, owing to the restriction of access roads and the absence of frontage development, a higher speed can be maintained with safety and the motorist can cross the town rapidly along a pleasantly landscaped road passing between and not through the built-up areas.

CYCLE TRACKS.

44. In Cwmbran the contours do not encourage cycling, and there may be little need to provide special tracks for cyclists. Where required, cycle tracks should take the most direct route available which is consistent with easy gradients. There is no need for the track to run along-side the main road unless this also happens to be the best route for cyclists. A cycle track along the general line of the parkway may be desirable.

CAR PARKS.

45. The reservation of land for car parks is recommended as close as possible to the buildings or open spaces which they serve. In the central area the principle, advocated by the police, of having many small or medium-sized well distributed car parks in preference to a few large ones should be adopted.

BRIDGES.

46. The proposal to plan a residential area for 10,000 people on the east side of the valley at Croes-y-ceiliog makes it essential to add to the number of road bridges over the river and main railway line and thus provide direct access between this area and the town centre.

47. Croes-y-ceiliog is a long narrow neighbourhood with two local shopping centres, the northern near the Garw estate and the southern near the junction of the Caerleon Road with the trunk road. It is suggested that at least two bridges are required to make a satisfactory linkage between Croes-y-ceiliog and the rest of the town and, further, that these should be on roads leading as directly as possible from the two neighbourhood centres in Croes-y-ceiliog to the north and south ends of the main shopping street so as to promote the development of a lively centre.

48. The two existing bridges are both at the north of the area, one being at Pontthydyrun and the other at Pontnewydd Station. The former is narrow and too far north to be of much value for cross-town communications.

49. We have considered the possibility of using the Pontnewydd Bridge as the permanent link with Croes-y-ceiliog North. This plan has the obvious disadvantage that the bridge would not provide convenient access from the west side of the town to the campus.

50. There are, however, other difficulties to be considered. Black Road takes a sharp bend to the east of the bridge and the reconstruction of both the bridge and the road would be essential. This would involve the acquisition and demolition of at least the farm buildings

and the two pairs of houses to the south of the road. Even if Black Road were widened it could not be considered a safe approach to the bridge from the east owing to the curving frontage development of terrace housing along the north-east side. To sum up, we consider that the cost of the necessary works at this point would be high, while the result would be far from satisfactory.

51. We much prefer the alternative shown on the Master Plan of an entirely new bridge built on clear land at a point 300 yards further south where it will be more useful to the town as a whole. Here the new bridge will not only serve the 5,000 population of Croes-y-ceiliog North, but will give direct access to the campus from the central area and the ring road.

52. The levels are favourable here for the construction of a bridge which would cross the main line about 18 ft. above the tracks and about 10 ft. above the river. We do not think the difference in the cost of a new bridge at this point and of the alterations to Pontnewydd Bridge would be great, whereas the advantage in convenience to the town of the new bridge would be most marked. The provision of the new bridge will, by providing an alternative route for traffic, greatly facilitate the future reconstruction of the existing road and bridges at Lower Pontnewydd.

CAERLEON DRIVE AND THE SOUTHERN BRIDGE.

53. We consider that the most suitable route for the southern road link is from the town square at Little Gelli, eastwards along the boundary between Grlings and Saunders Valves, over the railway and river which are close together here, and then curving slightly southwards joining the trunk road at a five-way roundabout where the new diversion and the Caerleon Road meet the present trunk road. A road and bridge in this position will provide the closest possible link between Croes-y-ceiliog South, the town square, and the main shopping street; it will also give access to both the campus and the Caerleon Road from the west side of the town.

54. Although some disturbance of the industrial properties here could not be avoided during construction of the road and bridge, the actual loss of land involved should not be more than half an acre for the roundabout plus a strip about 50 ft. to 60 ft. wide for the road and bridge. Even this space would not be wholly lost to industry if garages or storage buildings were built under the ramp up to the railway bridge.

55. In view of the fact that a new extension of the Saunders Valves works is urgently needed and will be affected by the location of this bridge, it is suggested that the necessary survey and technical examination of the proposal should be put in hand immediately, so that a decision may be reached without delay.

NEW BRIDGES AT OAKFIELD.

56. New bridges over the canal and the Eastern Valleys Line are proposed to the north of Oakfield Wire Works to carry the parkway. No special difficulties appear to arise as the land is clear. The canal bridge would be relatively inexpensive as it could cross at towpath level.

THE BRIDGES AT CWMBRAN.

57. The main function of the two existing bridges in Cwmbran will be to enable residents of St. Dials neighbourhood to reach the town centre and little, if any, through traffic is to be expected. It may be some years, therefore, before it is considered necessary to alter the blind corner where the road passes under the Cwmbran Branch Line unless it is required to run two-decker buses, in which case the roadway would have to be lowered.

58. In the case of the narrow iron bridge over the canal and Eastern Valleys Line, this is clearly long overdue for demolition. Its replacement by a wider bridge, not connected to Abbey Road and possibly sited more to the south, would not only remove a traffic problem but would facilitate the replanning of the hairpin bend and the construction of a longer and easier ramp down to the above-mentioned underpass.

59. To obtain satisfactory results from both the highway and the architectural points of view, the replacement of the iron bridge should be considered as one problem with the treatment of the underpass and the redevelopment of the obsolete properties at the north end of Victoria Street.

OTHER BRIDGES.

60. All the remaining bridges in the area are likely to need widening, raising, or strengthening in the future to meet the traffic demands of the new town but these are engineering problems which do not appear to affect the Master Plan.

THE CENTRAL AREA.

61. It is proposed that the new town centre should be placed in a 71-acre strip of undulating land between Grange Road and the Eastern Valleys Line with the principal shopping street running north and south. The south end of this street terminates in the civic square for which there is an admirable and conspicuous site near the brow of the hill at Little Gelli. Here important public buildings may be placed overlooking the central park to the south and in full view of the southern approach along Grange Road. The main entrance to the square from the south is a short avenue leading off Grange Road from the roundabout connected to the new southern bridge. From St. Dials direct entry to the square is planned by diverting the southern section of Coronation Road.

62. The northern end of the shopping street is its junction with the ring road: here also a new square might be planned, enclosed by public buildings. From this point the road enters the Pontnewydd residential area and runs north into Station Road, thus completing a new direct road link between the existing settlements of Cwmbran and Pontnewydd through the new shopping centre which, nevertheless, offers no temptation as a short cut for through traffic.

THE BUS STATION.

63. The site proposed for the bus station is in the north-east of the town centre opening off Grange Road. This position is equally convenient for access to the main shopping street and Girling's works and is within five minutes walk of the schools on the campus. If necessary, direct access from the bus station on to the parkway could also be arranged.

64. A subway leading to the bus station from the east side of Grange Road should be provided for the use of the large numbers of employees in the works. This might also be extended below the main railway line so as to give access to the campus for the use of secondary school children.

A LORRY PARK.

65. In the event of a lorry park being required, the triangular site between Avondale Road and the main railway line to the north of Lower Pontnewydd Station might be reserved for this purpose.

III. RAIL AND AIR SERVICES

A CENTRAL RAILWAY STATION.

66. It would seem that a new town of 35,000 should have a central railway station with all modern facilities rather than four small stations built for quite different conditions and inadequately equipped for the needs of to-day. It was, therefore, suggested to British Railways that a new central station should be built on the main line to the north-east of the town centre.

67. The Railway Executive have stated, however, that the idea of a new central station is not acceptable for the following principal reasons, apart from the high cost involved :—

- (a) Residents would mostly have further to travel to a central station than to the four existing stations distributed throughout the area and this might deter people from using the rail services.
- (b) Passenger traffic may diminish rather than increase as the new town will provide homes near their work for many who now have to travel in from outside the designated area. If necessary, however, the existing facilities can be expanded.
- (c) A new station on the main line would be of little benefit to travellers to Newport who mostly make this journey by bus.
- (d) It would be undesirable to increase the traffic on the already overcrowded main lines.

68. We must admit that these are strong arguments against a new central station, and consequently no reservation for it has been made in the Master Plan. British Railways are, however, proposing to add two sets of tracks to the main line, and a strip of land 30 feet wide along the east side of the embankment has, therefore, been reserved.

THE GOODS YARD.

69. In our opinion reconstruction of the town is likely to necessitate the enlargement of the goods yard in Cwmbran. We have, therefore, reserved an area of 3 acres for its expansion southwards. We also recommend that the existing narrow entrance off Victoria Street should be closed and a new entrance be provided off the main southern approach road. Heavy lorries will thus not need to enter the St. Dial's residential and shopping area.

CWMBRAN BRANCH LINE.

70. In the hope that it might be possible to improve the planning of the area south-west of the town centre and eliminate entirely the two underpasses beneath the Cwmbran Branch Line, in Cwmbran and in Grange Road, the Railway Executive were asked whether it would be practicable, from the operating point of view, to remove this branch line and replace it by another to the north of the Designated Area.

71. The reply was to the effect that the Cwmbran Branch Line must be retained on account of its value for freight and passenger services. It therefore appears that the alterations to the two underpasses, referred to in the previous chapter, will be necessary.

A HELICOPTER LANDING GROUND.

72. Present developments in the transport of passengers and goods by helicopter suggest that it would be wise to reserve land in Cwmbran for this, the only type of air service for which the designated area appears to be suitable. The site proposed, covering 22 acres, is flat, close to the town centre and industrial areas, and has unobstructed flightways both to the north and south.

IV. INDUSTRY AND EMPLOYMENT

73. Cwmbran is one of the principal iron and steel centres in Monmouthshire with a long tradition behind it; the manufacture of iron was started as long ago as 1588 in the nearby town of Pontypool.

74. Local industry to-day in the designated area is of three kinds—old-established metal processing, brickworks, and the recent new-comers, mainly in the light industry groups; in all, there are twenty firms. Among the first are tinplate and nut and bolt works with their problem of effluent disposal; the second comprises brickworks with their diminishing areas of brick earth, and problems of reinstating the land; the third kind, now the largest employer of labour, consists mostly of branches of midland firms which have settled alongside the railways during the last fifteen years; they include makers of brake linings, valves, biscuits, and dairy machines.

75. In addition to the 20 firms in the designated area which employ 6,500 people, account must be taken of four other large factories, a steelworks immediately to the north at Panteg, a glass works south of Pontypool, a nylon factory at Mamhilad six miles away, and an ordnance factory at Glascoed, also six miles away. The steelworks is so close that many of its workers are bound to be attracted to the new town by the better houses, schools, shops, and playing fields which it will offer. As Mamhilad was chosen for nylon manufacture because of the clean atmosphere, and Glascoed for the ordnance factory because of its isolation, no houses for either are likely to be built nearby. Workers at both must therefore be housed elsewhere, and many of those who now travel considerable distances from the mining valleys to the west could certainly be accommodated in the new town.

76. The new town's ultimate population of 35,000 is expected to include 16,000 workers of whom 11,000 may be in manufacturing and 5,000 in service industry. Existing workers however, including those in the four factories outside the designated area, already number 13,800 in manufacturing and 600 in service industry. The expansion already arranged in manufacturing and the increase of 4,400 expected in service industry will provide jobs for considerably more than the 16,000 workers in the new town. The balance of workers required must therefore be drawn from surrounding areas, and some journeys to work of 5 miles or more will continue. The problem is to provide more houses near the work rather than to provide more jobs; this conclusion coincides with the opinion of the Board of Trade that no additional large-scale employment is needed at Cwmbran where unemployment is less than 2 per cent of insured workers.

77. If substantial factory expansion should occur it would lead to competition between manufacturers for the available labour, and probably create a shortage of workers for the new town's service industries, thus necessitating a wider search for labour and the consequent perpetuation of the long journey between home and work. Against this, however, it should be noted that some 1,500 people travel out of Cwmbran to work elsewhere, some of whom will undoubtedly be absorbed by Cwmbran's expanded industry.

78. In terms of physical planning it would be logical to conclude that little or no land need be allocated in Cwmbran for new manufacturing industry; in practice, however, a margin must be left for the expansion of existing industries and for unforeseen needs; the reservation of land for limited expansion is, therefore, recommended.

79. Industrial balance as between types of industry in Cwmbran is good. The twenty-four firms concerned employ 11,500 men and 2,900 women, a ratio of 4 to 1; this comparatively high proportion of male employment is an asset to the new town as it indicates that the male breadwinners are fully employed. It also suggests that female labour should be available to staff the service industries whose development is expected to be fairly rapid with the expansion of the new town.

80. Prospects for industry within the designated area are good. Of the large works outside the designated area, the ordnance factory is perhaps liable to fluctuation in numbers employed, but the nylon factory has excellent prospects and is expanding, and the Panteg steel works is a most important source of employment.

TRAVEL TO WORK.

81. The need to reduce travel to work is one of the chief reasons for the new town. The survey shows some 5,160 of the 14,400 industrial workers employed by the twenty-four firms travel 5 miles or more each way between their homes and their work. Not all of these will be rehoused in Cwmbran: it may be equally convenient in terms of travelling distance for some to remain living where they are, particularly those employed at Mamhilad or Glascoed, which are 6 miles from Cwmbran. Some of the older people may not be willing to move because of their deep attachment to their homes: another deterrent may be the higher rents of new houses at Cwmbran, though this extra cost will be at least partially offset by a saving on travel to work.

82. Apart from people travelling into Cwmbran to work some 1,500 travel outwards: 1,100 go northwards to Panteg, Pontypool, Mamhilad, and Glascoed, and 400 go south to Newport. We assume that many of these will continue in their present employment, though with increasing opportunities in the new town as it expands, some will probably find work here and thus avoid longer journeys to other towns.

EXPANSION OF INDUSTRY.

83. The factories in the designated area occupy 127 acres of land, and have 27 acres in reserve of which 10 acres are required by three firms for immediate development. No other firm in the designated area has so far expressed any intention to expand.

84. Two additional areas totalling 43 acres are recommended for expansion: the larger site of 26 acres and the better one for development is at Pontrhydyrun, north of the tinplate works, where road and rail facilities are available: the land is flat and free of buildings. The other site of 17 acres adjoins the branch line at Cwmbran and is farm land with buildings: the Cwmbran brook which runs through it makes it rather damp, but this can be corrected by proper drainage. The total area of land available for industrial expansion is therefore 60 acres.

85. Road access to some factories is bad, as it was neglected in the past when they were primarily dependent on rail transport. However, with the new road system to be provided, access will be improved.

SERVICE INDUSTRY.

86. We have assumed that the ratio of workers in service industry to the total number of workers in Cwmbran will increase from its present figure of 9 per cent to approximately 30 per cent to meet the needs of the town's ultimate population—that is from 600 to 5,000. This figure of 5,000 covers employment in shopping, business, local government, transport, and other services, and in small-scale industries such as garages and workshops, laundries, cleaners and dyers, bakeries, dairies, builders' yards, and coal depots. Some of these may wish to be located in an industrial zone: others will want to be as close as possible to the main shopping and commercial area. For the latter, three service industry sites totalling 37 acres are proposed in the Master Plan as follows:—

- (1) A 20-acre site between Coronation Road and the Eastern Valleys Line. Part of this site is at present occupied by two small blocks of houses, some industrial buildings, and a recreation ground belonging to Guest, Keen & Nettlefolds. Its location adjoining the main shopping centre makes it particularly suitable for service industries, though only part is available immediately for development.
- (2) An 11-acre site at Forge Hammer on both sides of Woodside Road. This is an area of obsolete development lying between the canal and the railway. It is particularly suitable for redevelopment with service industries owing to its proximity to the town centre.
- (3) A 6-acre site between the north end of Grange Road and the main railway line. This site is at present occupied with terrace housing and allotments. The housing is old and not well related to the amenities in the nearest neighbourhood unit, Croes-y-ceiliog North. Its redevelopment for service industry is suggested but this may be delayed until after the other two service industry areas have been fully developed.

87. It is important that better service facilities should be provided at the start of the new town's building and expand with it, so that as houses are built, their occupants will get the habit of depending on their local shops and other services instead of looking to Newport or Pontypool.

NUISANCES BY SMOKE AND EFFLUENT.

88. In certain conditions of temperature and wind a low pall of smoke is apt to hang over the valley in the middle of the designated area. It is not realistic to suggest moving the offending factories, but their smoke and fumes might be controlled by filters and screens.

89. Apart from the abatement of smoke, the untidy surroundings of some of these factories might be improved by screening with trees. With the large increase in population and the consequent expansion of the built-up area and development of the town centre, building control will become much more important.

90. Pollution of the Afon Lwyd by industrial effluent is considerable, particularly from steel processing. Before the river can be considered an asset to the new park through which it flows, the industrial wastes which reach the river from the wire works at Oakfield and tinplate works at Pontnewydd will have to be suitably treated.

91. A quarter of a mile beyond the northern boundary of the new town the Panteg steelworks' slag heap is being extended into the green belt; further expansion of this unsightly dump is undesirable, and the possibility should be investigated of using it to help fill the derelict brickfields mentioned later. Meanwhile a belt of trees should be planted to screen the tip, particularly from the south and east.

BRICKFIELDS.

92. Brickfields deserve special consideration because of the problem of reinstating the ground after the brick earth is excavated. There are four brickworks in the designated area, Gwent, Henllys, Landowlais, and Star: the first three are working clay, and are marked on the plan as excavation zones where extraction of clay and erection of the necessary plant and buildings is permitted. The fourth brickworks—Star—is scheduled as a permanent industrial site as its clay is imported (extraction being at an end) and the site adjoins other industrial ones alongside the railway.

93. When extraction at Gwent and Henllys is finished and the reinstatement and landscaping of the sites are complete, we suggest that the former should serve the housing development of Croes-y-ceiliog North and the latter, although within the Designated Area, should become a part of the green belt. We regard the present worked-out part of the brickfield of Landowlais and its buildings alongside the railway as a permanent industrial site: the bulk of its land will eventually revert to the open space.

94. South-west of the canal, the same firm owns 12 acres now included in the green belt, but no objection should be raised to the extraction of brick earth on this land, subject to its subsequent reinstatement.

95. Agreements have been made for the eventual landscaping of the areas now being excavated. This treatment is important as there is a shortage of flat sites in the area, and the appearance of worked-out brickfields can be most detrimental to amenities. The town already contains ugly examples of worked-out brickfields which have not been so treated.

DERELICT SITES.

96. The designated area contains more than 46 acres of derelict land, comprising three sites formerly occupied by a chemical works and brickfields. The first site of 25 acres, west of Cwmbran Urban District Council Offices, is now being filled by tipping: it is shallow and should consolidate quickly enough to be converted soon into a recreation ground. Both the worked-out brickfields are deeper, and need much filling in. As a long term policy we recommend the reservation of the old brickfield opposite the Urban District Council Offices for industry when filled and levelled. The other derelict brickfield at Oakfield would be ideal for the neighbourhood's centre when filled and levelled and is so proposed on the Master Plan. Flat sites being scarce in Cwmbran, the new town should not leave in a derelict condition potentially valuable land, particularly near the centre.

V. RESIDENTIAL AREAS

97. Residential areas in the plan of Cwmbran New Town are conceived as seven neighbourhood units grouped around the town centre as closely as the topography will permit and linked together by two main roads and new bridges over the canal, railway lines, and river.

98. The location and boundaries of these seven neighbourhoods, varying in population from 3,000 to 6,700, have been particularly influenced by the desire to retain the existing development as the nuclei of the new neighbourhoods and by the contours of the ground, which in parts of the central and western areas are too steep for economic building. Most of the proposed housing development is confined to the higher ground, the flat plain in the middle of the valley being mainly used for the town centre, industrial areas, and playing fields.

NEIGHBOURHOOD PLANNING.

99. It may be asked why it is preferred to divide the town into neighbourhood units rather than develop on the lines of existing towns, i.e. a continuous outward spread from the centre. There are three main reasons for the adoption of neighbourhood planning. Firstly, it is safer, because the planning of neighbourhoods so that the main traffic routes pass between rather than through them enables cross-town traffic to avoid roads lined with housing development. The danger to life which exists in older towns where residential roads serve also as main traffic routes is thus avoided. Furthermore, by planning the local shops, community buildings, and primary schools in the centre of the neighbourhood, the normal daily movement of housewives and children to shops and schools does not involve the crossing of major roads.

100. The second advantage of neighbourhood planning is that it promotes social development and civic consciousness within the town. The fact that each area has its own individuality arising from its topography and type of development and its own centre, where residents will meet and get to know one another, is of great social importance.

101. When each neighbourhood is clearly defined and has a population large enough to organize and maintain certain desirable amenities, yet small enough to enable each resident to know a fair proportion of the other residents, there is a good chance of obtaining the mutual and friendly co-operation in social activities which go far to make full and happy lives.

102. A neighbourhood of about 5,000 is comparable in population to Cwmbran or Pontnewydd as they exist to-day, and it has been found by experience that this population can maintain a local shopping centre of twenty shops, with a bank and post office, a junior and infant school, and certain community buildings such as a hall, a clinic, and branch library.

103. It may be suggested that this sub-division of the town into neighbourhoods will lead to concentration of interest on neighbourhood activities to the exclusion of the larger affairs of the town. On the contrary, we believe that those who have acquired habits of good citizenship by taking part in the communal activities of their own neighbourhood, will be more likely to interest themselves also in civic affairs.

104. The third reason for planning on neighbourhood lines is convenience. For administrative reasons some breakdown of the town's built-up areas into wards is necessary and the neighbourhood with its clearly marked boundaries provides a convenient unit.

105. To the residents themselves the location of the shops, school, and communal buildings in a neighbourhood centre in the heart of the area is clearly a most convenient arrangement, making it normally possible for them to walk to the centre in ten minutes from any part of the neighbourhood.

106. A neighbourhood having a population of 5,000 at a net residential density of 35 persons per acre and a reasonable allowance for shops, schools, and open spaces, may cover about 180 acres, and measure .57 mile across so that the distance from the perimeter to the centre rarely exceeds one-third of a mile.

ROADS IN THE NEIGHBOURHOODS.

107. Although the detailed layout of development roads in the residential neighbourhoods does not come within the scope of the Master Plan, the Report would be incomplete if it did not state the principles on which we believe the town's residential roads should be planned.

It is recommended that the number of entrances to a residential area off a main traffic route (such as the parkway) should normally be limited to two. These roads should usually lead to the neighbourhood centre and, if they are likely to serve as bus routes, they should be wider than the majority of the residential roads.

108. It is important to remember that whereas with main roads the fast and safe movement of wheeled traffic is the principal consideration, in planning residential roads the convenience and safety of the people using them and the development of the area are the main factors in design, the movement of vehicles being secondary.

109. The road plan of a residential area should therefore be designed so that it does not provide a short cut from one part of the town to another or include straight stretches of road long enough to encourage speeding.

PLAYING FIELDS.

110. Neighbourhood playing fields and children's playgrounds are discussed in Chapter VIII of this Report on page 35.

ALLOTMENTS.

111. Allotments are proposed on the scale of 1.5 acres per 1,000 population. They should be sited wherever possible at the rear of houses and entered from their back gardens, so as to be conveniently placed but screened from view. The untidy appearance of many allotments in Britain is quite unnecessary; the layout of the plots should be carefully planned and the design of the toolsheds standardized.

TYPES OF DWELLING.

112. It is recommended that every neighbourhood should contain a variety of types of dwelling in order to cater for the different requirements of large and small families, bachelors, old persons, and persons in different income-groups. The detail planning of the neighbourhoods lies outside the scope of the Master Plan but the residential densities suggested in this Report will naturally be affected both by the size of the individual dwellings and their sites and by the proportion of houses to flats. An early study of this problem is therefore desirable.

113. In 1948 the Social Survey Division of the Central Office of Information prepared the following table showing the numbers and types of dwellings likely to be required by households of different sizes in an average group of 5,000.

DWELLINGS IN AN AVERAGE NEIGHBOURHOOD OF 5,000 POPULATION.

<i>No. in Household</i>	<i>No. of Dwellings</i>	<i>Percentage of Dwellings</i>	<i>Types of Dwellings</i>	<i>No. of Each Type</i>	<i>Total No. of Persons</i>
1 person ..	100 ..	7 ..	Flats ..	60 ..	60
			Houses ..	20 ..	20
			Bungalows ..	20 ..	20
					100
2 ..	350 ..	24 ..	Flats ..	80 ..	160
			Houses ..	250 ..	500
			Bungalows ..	20 ..	40
					700
3 ..	390 ..	27 ..	Flats ..	70 ..	210
			Houses ..	290 ..	870
			Bungalows ..	30 ..	90
					1,170
4 ..	280 ..	19.8 ..	Flats ..	40 ..	160
			Houses ..	220 ..	880
			Bungalows ..	20 ..	80
					1,120
5 ..	160 ..	11 ..	Flats ..	20 ..	100
			Houses ..	135 ..	675
			Bungalows ..	5 ..	25
					800
6 ..	84 ..	5.8 ..	Flats ..	10 ..	60
			Houses ..	74 ..	444
					504
7 ..	41 ..	2.9 ..	Houses ..	41 ..	287
8 ..	21 ..	1.4 ..	Houses ..	21 ..	168
9 ..	9 ..	.6 ..	Houses ..	9 ..	81
10 ..	7 ..	.5 ..	Houses ..	7 ..	70
	1,442 dwellings	100			5,000

SUMMARY.

<i>Type</i>	<i>No.</i>	<i>Proportion of Dwellings per cent</i>	<i>People Housed</i>	<i>Proportion of Population per cent</i>
Flats ..	280 ..	20 ..	750 ..	15
Houses ..	1,067 ..	74 ..	3,993 ..	80
Bungalows ..	95 ..	6 ..	253 ..	5
	1,442 ..	100 ..	5,000 popn.	100

114. It is not suggested that these figures necessarily apply to Cwmbran in 1951, but the numbers of persons in each household group, having been based upon statistics for the whole country, may not be far wrong. On the other hand the proportions of flats, houses, and bungalows may be useless as a guide, as preferences for these three types of dwelling vary considerably in different parts of the country.

115. In Cwmbran it is thought that a high proportion of flats is unlikely to be popular and we believe that not more than 10 per cent of the population should be housed in flats in the first neighbourhoods built. The remainder would be in detached, semi-detached, or terrace houses, bungalows, and maisonettes. Of these types, we suggest that terrace housing following the contours will prove to be the most useful for development on the steep slopes which prevail in so many parts of the area. A wide-fronted terrace house with a short, square garden at the rear and an open front garden will be economical in foundations, capable of being planned at

high densities on sloping ground and, as may be seen in Bath and other hilly towns, architecturally pleasing. Experience shows that the necessary maintenance by the Council of the front garden—say 15 ft. deep—costs about 1d. per day per house.

DENSITIES.

116. The overall net residential densities proposed for each neighbourhood, together with all the relevant acreage and population figures, are given at the end of this section and have been calculated after careful consideration of the topography and other factors.

117. Densities will vary in different parts of the neighbourhoods according to the types of development; the overall net density figure which we give for each neighbourhood is the resultant of all the densities in the existing and new development in that neighbourhood.

118. Deductions for school and shop sites, playing fields, existing developments, redevelopment areas, woods, streams, derelict land, and other sites unsuitable for building have all been made. The remainder, referred to as the net acreage of new development and shown brown on the plan, includes the new housing, allotments, nursery schools, development roads, and small greens for amenity purposes.

PONTNEWYDD.

119. The Pontnewydd neighbourhood, covering 315 acres, lies at the northern edge of the designated area on land which falls from 430 ft. above sea level at the north-west corner to 200 ft. at the south-east. The neighbourhood is cut into three parts by the canal and the Eastern Valleys Railway Line between which lies the shopping centre on Commercial Street. Avondale Tinplate Works and the new industrial zone adjoin the neighbourhood on the east, the green belt forming the northern boundary, Ty-awca and Maindy Wood the western, while at the south lie Forge Hammer and Church Wood with its old claypits and rough ground.

120. The present population is approximately 4,220 of whom 1,440 live in 370 obsolete houses in eight areas covering 21.5 acres. Some eighty or ninety houses have been built in Pontnewydd since the war, largely in the north of the neighbourhood and in the Station Road area. It is proposed to raise the population of the neighbourhood by 2,460 to 6,680, partly by infilling but mainly by extending the area westwards towards Upper Cwmbran and south-eastwards to the town centre. Most of the new development will be on the attractive sites to the west where, as services already exist, development can proceed at once. On the high ground near Holy Trinity Church a seven acre site for a new Primary School is proposed, with a secondary shopping centre further west on Mount Pleasant Road.

121. Pontnewydd is comparatively well furnished with playing fields, having four of about three acres each, a rugby football ground, and, just outside its northern edge, a golf course. These existing grounds are all retained in the plan and an additional 12.5 acres of playing fields are reserved between Station Road and the Tinplate Works.

122. The canal offers possibilities for attractive redevelopment as a narrow strip of park running through the area. It is suggested that space should be reserved along both sides of the canal for the whole of its length within this neighbourhood, thus linking the green belt at the north with the parkway in the centre of the town.

123. Roads and streets in Pontnewydd are generally narrow, particularly in the shopping centre where one-way traffic prevails. It is suggested that some houses on the northern side of Commercial Street should be demolished in order to create a small square to improve the centre and eliminate the present inconvenient traffic circulation. The underpass below the Eastern Valleys Lane on the Pontrhydyrun Road is narrow and too low to take double decker buses.

124. The development at the south-east of the area adjoining the town centre is particularly important and this site would be suitable for any flats which may be required, both on account of its proximity to the town centre and the desirability of having along the parkway taller buildings which will be more in scale with the architecture of the town centre.

GREENMEADOW.

125. Greenmeadow is an attractive area of 177 acres on the west side of the town. The land falls steeply from 520 ft. near Greenmeadow Wood to 280 ft. at the south-west where it adjoins the parkway. The Dowlais brook and the woods along it are in the centre of the

neighbourhood which is also separated from Coedeva by playing fields and the site of the secondary modern school. The area is a delightful one with fine sites overlooking the town on the south-east slopes; there is practically no existing development apart from Greenmeadow Farm, an attractive white-washed group of buildings which is scheduled for preservation. It will not be possible, or even desirable, to build here at high density. The total ultimate population proposed for this neighbourhood is 3,644 persons with an overall net residential density of 28 persons per acre.

126. The development of Greenmeadow cannot proceed on any large scale until better roads have been built; the present lanes are inadequate for heavy vehicles.

127. To the west of this neighbourhood there are some 30 acres on the higher ground which are suitable for building should it ever become necessary to accommodate more than 35,000 people in the new town.

COEDEVA.

128. Coedeva lies at the south-west of the new town and is bounded by the parkway and the canal on the north-east and by Two Locks Road on the south. The western boundary of the area roughly follows the 350 ft. contour line, the land falling to the east down to 220 ft. by the canal. Existing development includes the housing at Cocker Avenue, the newer prefabricated houses to the west, and the older housing along Two Locks Road, where some 540 people out of a population of 2,050 live in 155 obsolete houses on ten acres.

129. The neighbourhood has a gross area of 161 acres for which a population of 5,454 people is proposed, with an overall net density of 40 persons per acre. Two playing fields are proposed, totalling 11.3 acres or 2.1 acres per 1,000 population.

130. The new road plan within this area will be based, as far as possible, upon the existing roads and it is suggested that a loop road should be formed so as to take buses along Cocker Avenue, through the middle of the neighbourhood towards Greenmeadow, and back on to the parkway.

OAKFIELD.

131. Oakfield is a small neighbourhood of 156 acres lying in the angle of the Eastern Valleys and Cwmbran Branch railway lines and bounded on the south by the town's green belt. Existing development includes the housing along Llantarnam and Oakfield Roads, the Court Farm prefabricated housing estate, and some buildings along the trunk road at Llantarnam. The site between Court Farm and the secondary school is now being developed by the Llantarnam Housing Society at approximately 12 houses to the acre. The rest of the land available, mainly to the west of Court Wood, is flattish and at a level of about 140 ft. It is capable of development at a high density. The present population is 1,675 of whom 129 live in 32 obsolete houses on three acres.

132. By reason of its long thin shape, its ribbon development, the large area of claypits, the scarcity of suitable building land and the deduction of 21 acres for a secondary modern school at Llantarnam, the Oakfield neighbourhood is a difficult one to plan. It is felt that a neighbourhood based on a primary school and local shopping centre should normally have a population of not less than 5,000 people. In this case, even at the proposed overall density of 37.5 persons per acre, it will be difficult to accommodate more than 4,175 people in this neighbourhood.

133. A good flat site for the primary school is available to the north of Court Wood. The ideal position for the local shopping centre would be opposite the school on the clay-pits in the angle of Oakfield and Llantarnam Roads, but it seems unlikely that these pits will be filled and consolidated before the shops are needed for this neighbourhood; we therefore recommend as the next best alternative, the placing of the shopping centre on the allotments to the west of the cemetery.

134. If the detailed planning of this neighbourhood shows that it is not practicable, within the space available, to produce a satisfactory social unit, we suggest that the possibility of acquiring additional land outside the designated area should be considered. The need for more land in Oakfield emphasises the importance of reclaiming the clay-pits in the northern

half of the area and it is thought that this might be done by filling them with slag from Panteg Steel Works which now constitutes a threat to amenities in the narrowest part of the town's green belt. On the assumption that this will be done and the land made available for playing fields and allotments, no reservation for these purposes has been made elsewhere.

135. It is unfortunate for this neighbourhood that Llantarnam Road is at present the main route to Cwmbran and Panteg from Newport. For a town of 35,000 the retention of this narrow residential road as the southern approach to the centre and the industrial areas is clearly most undesirable and, indeed, unsafe. An entirely new road over open ground to the south-west of the Oakfield neighbourhood is described on page 10; if this proposal is adopted only minor improvements to Llantarnam Road will be necessary. It is recognised that some industrial traffic is bound to use this road to reach the four industrial sites between Llantarnam Road and the railway, but the new southern approach from the Three Blackbirds will enable most of the traffic to by-pass Oakfield.

CROES-Y-CEILIOG.

136. Croes-y-ceiliog is a small existing settlement on the east side of the valley with a population of approximately 1,050. The whole of this side of the valley falls westwards towards the river, the levels varying from 350 ft. at the north-east near the trunk road to 140 ft. at the south-east by the river; apart from the woodlands practically all this land will provide attractive building sites. It is proposed to create two linked neighbourhoods, each with a population of approximately 5,000 on these western slopes between the northern boundary of the designated area and the southern tip of the Crown Road development along the Caerleon Road. The total acreage of the two neighbourhoods is approximately 418 acres, of which 342 residential acres might be developed at an overall net density of 29.3 persons per acre.

137. The linkage of Croes-y-ceiliog with the west side of the town is clearly of great importance if the social and commercial development of the new town is to be satisfactory. Two new bridges over the river and railway line are therefore proposed, connecting the north and south ends of the main shopping street in the town centre with the two local shopping centres in Croes-y-ceiliog North and South. For the northern centre a site to the west of the Garw housing estate is proposed, with a primary school near it further north. The centre of Croes-y-ceiliog South is placed near the junction of the trunk road with the Caerleon Road, again with the primary school to the north of it. In order to keep fast and heavy traffic out of the residential areas which are now penetrated at Croes-y-ceiliog, it has been proposed that the trunk road should be diverted eastwards. We suggest that those pieces of land which lie between the designated area and the trunk road diversion should be designated and added to the residential development at Croes-y-ceiliog. That section of the trunk road which now lies within the area, running northwards from the Caerleon Road junction, would thus become merely the spine road of the neighbourhood.

138. In the centre of the area between the two bridges it is proposed to develop an educational campus with a secondary modern school to serve Croes-y-ceiliog North and South, a boys' and girls' grammar school and a technical school.

139. Neighbourhood playing fields for Croes-y-ceiliog are proposed mostly in the riverside land, covering 32.1 acres, or 3.2 acres per 1,000 population.

140. A cemetery for this area is required, and the centre of The Plantation appears to be a suitable site as it will be well screened by the surrounding trees.

ST. DIALS.

141. St. Dial's neighbourhood in the centre of the area includes most of the existing settlement of Cwmbran, from the south-east end of Victoria Street to the north-west end of Commercial Street. An area of 188 acres is proposed for the neighbourhood, which is bounded on the north and north-east by Clomendy Road and on the west and south-west by the parkway. St. Dials rises to a height of 400 ft. and the contours of the area are steep and irregular; nevertheless, we think it will be possible to develop the area up to a total population of 4,300 within an overall net density of 29.7 persons per acre. The neighbourhood now contains 1,420 people of whom 880 live in 220 obsolete houses.

142. The existing shopping centre in Commercial Street is not conveniently placed for residents in the north-west of St. Dials, and it may be necessary to form a small secondary shopping centre nearer the centre of the neighbourhood, possibly on Pen-y-waun Road. The most suitable site for the primary school is to the north of this point, which is reasonably central.

143. It is suggested that the steep northern and north eastern slopes of St. Dials should remain undeveloped.

144. Two playing fields are proposed for St. Dials, one on the flat land adjoining the canal, and the other at the north-west of the area.

145. The building of the new town will call for the enlargement of Cwmbran goods yard and it is recommended that a new entrance should be formed at the south-east so that heavy traffic need not enter Victoria Street.

146. The rebuilding of the iron bridge over the canal and railway line at the east end of Commercial Street is long overdue and proposals for its reconstruction have already been made in this Report. The development at the north end of Victoria Street and Ventnor Road is obsolete and its reconstruction should be considered in conjunction with the planning of the new bridge and the whole road layout at this point. It would appear that a pleasant square might suitably be created here by realignment of the buildings; at the same time improvements might be made at the hairpin bend and in the approach to the underpass, the carriageway of which will have to be lowered if two-decker buses are required to pass under the Cwmbran branch line. A forecourt to Cwmbran railway station on the south-west side of the branch line is likely to be needed and there is room for this to be provided.

THE TOWN CENTRE.

147. The town centre as proposed covers an area of 71 acres and it is reasonable to suppose that some 500 people or more may occupy houses or flats over shops within this area. There are at present a number of houses along the east side of Coronation Road which are likely to remain for some time but may ultimately be replaced by commercial property. At Forge Hammer some 500 people living in 125 obsolete houses will have to be accommodated elsewhere when the site is required for service industry.

AREAS NOT FORMING PART OF THE NEIGHBOURHOODS.

148. Outside the neighbourhood units as planned there is a certain amount of scattered development, at Upper Cwmbran, Springvale, The Woodlands, Woodland Street (St. Dials), Pontrhydyrun, Ty-Coch Lane, and along the extreme west of the area. The total population in these scattered areas, and in those parts of Forge Hammer, Grange Road, and Oakfield, which are zoned for redevelopment, amount to over 3,000 people. These are omitted from our population figures as they may, sooner or later, move into neighbourhood units. Should applications for alterations or redevelopment of these properties be made, each case will have to be dealt with on its merits. There may be no objection to limited redevelopment, provided the siting, materials, and colour receive careful consideration.

RESIDENTIAL AREAS

149. In the following pages we give details of the acreage, population, and density figures proposed for each neighbourhood. It should be noted that land for allotments on the scale of approximately 1.5 acres per 1,000 population and nursery schools—say 15 in all on one-third acre sites—are included in the net residential acreage figures; although small deductions for these purposes must be made from the areas of new development they should not materially affect the density figures we propose.

PONTNEWYDD.

A. Gross acreage	acres	315.7
Deductions:		
Playing fields	30.0	
Primary school	0.0	
Shopping centres	9.5	
Cemetery	1.4	
Canalside North	12.4	
Mount Pleasant Park	13.0	
Unsuitable for building	10.0	
	82.3 acres	
Net residential acreage (315.7 less 82.3)		233.4
	p.p.a.	p.
B. Existing housing development		102
Existing population		4,221
Existing net density	41.4	
C. Existing housing retained		79
Existing population undisturbed		2,713
Existing net density of population undisturbed	34.3	
D. Obsolete houses redeveloped: 370 on		21.5
Population to be rehoused		1,440
Obsolete housing density	67	
E. Redevelopment of 21.5 acres at 30 p.p.a. will house		645
Leaving an overspill (1,440 less 645) of		795
Overspill of 795 at 25 p.p.a. requires		32
F. New development	132.9 a. at 25 p.p.a. =	3,322
Existing development retained	79 a. at 34.3 p.p.a. =	2,713
Redevelopment	21.5 a. at 30 p.p.a. =	645
G. Overall	233.4 a. at 28.6 p.p.a. =	6,680

GREENMEADOW.

A. Gross acreage	acres	177
Deductions:		
Playing fields	10.0	
Primary school	6.5	
Shopping centre	5.0	
Woods and streams	24.5	
	46.0 acres	
Net residential acreage (177 less 46)		131
	p.p.a.	p.
B. Existing housing, all retained		3
Existing population		60
C. New development 128 a. at 28 p.p.a.		3,584
D. Overall 131 acres at 27.8 p.p.a.		3,644

COEDEVA.

A.	Gross acreage	161	acres
	Deductions :		
	Playing fields	11.3	
	Primary school	6.0	
	Shopping centre	5.0	
	Streams	2.5	
		24.8	acres
	Net residential acreage (161 less 24.8)	136.2	
B.	Existing development retained	p.p.a.	p.
	Existing population		1,504
	Existing net density	47	
C.	New development 104.25 a. at 30.9 p.p.a.		3,950
D.	Overall 136.25 a. at 40 p.p.a.		5,454

OAKFIELD.

A.	Gross acreage	156.3	acres
	Deductions :		
	Playing fields (on claypits)	25.3	
	Primary school	7.0	
	Shopping centre	4.0	
	Cemetery	3.5	
	Woods	5.0	
		44.8	acres
	Net residential acreage (156.3 less 44.8)	111.5	
B.	Existing housing development	p.p.a.	p.
	Existing population		1,674
	Existing net density	30	
C.	Existing housing retained		53
	Existing population undisturbed		1,546
	Existing net density of population undisturbed	29.2	
D.	Obsolete houses redeveloped : 32 on		3
	Population to be rehoused		129
	Obsolete net density	43	
E.	Redevelopment of 3 a. at 43 p.p.a. will house		129
	No overspill.		
F.	New development	55.5 a. at 45 p.p.a. =	2,500
	Existing development retained	53 a. at 29.2 p.p.a. =	1,546
	Redevelopment	3 a. at 43 p.p.a. =	129
G.	Overall	111.5 a. at 37.45 p.p.a. =	4,175

ST. DIALS.

A.	Gross acreage	188.2	acres
	Deductions :		
	Playing fields	6.0	
	Garden of Remembrance	7.6	
	Canalside South	6.0	
	Primary school	7.0	
	Shopping centres	8.8	
	Goods yard	3.0	
	Claypits	2.0	
	Station	2.5	
		42.9	acres
	Net residential acreage (188.2 less 42.9)	145.3	

ST. DIALS—(cont.)

				p.p.a.	p.	acres
B.	Existing housing development	..	..	..		45
	Existing population	..	..	..	1,422	
	Existing net density	..	..	31.6		
C.	Existing housing retained	..	..	..		33
	Existing population undisturbed	..	..	..	542	
	Existing net density of population undisturbed	..	..	16.4		
D.	Obsolete housing to be redeveloped: 220 on	..	..	..		12
	Obsolete population to be rehoused	..	..	..	880	
	Obsolete housing density	..	..	73.3		
E.	Redevelopment of 12 a. at 35 p.p.a. will house	..	..	..	420	
	Leaving as overspill (880 less 420)	..	..	..	460	
	Overspill of 460 at 35 p.p.a. requires	..	..	..		13
F.	New development	..	..	190.3 a. at 33.4 p.p.a.	= 3,350	
	Existing development	..	..	33 a. at 16.4 p.p.a.	= 542	
	Redevelopment	..	..	12 a. at 35 p.p.a.	= 420	
G.	Overall	..	..	145.3 a. at 29.7 p.p.a.	= 4,312	

CROES-Y-CEILIOG.

						acres
A.	Gross acreage	..	..	..	..	418.4
	Deductions:					
	Playing fields	..	..	..	32.1	
	Primary schools	..	..	..	16.0	
	Shopping centres	..	..	..	11.0	
	Cemetery	..	..	..	3.6	
	Woods	..	..	..	13.5	
					76.2 acres	
	Net residential acreage (418.4 less 76.2)	..	..	..		342.2
B.	Existing housing: all retained	..	..	..		46
	Existing population	..	..	..	1,041	
	Existing net density	..	..	22.6		
C.	New development on 296.25 a. at 30.37 p.p.a.	..	..	..	8,994	
D.	Overall 342.25 a. at 29.32 p.p.a.	..	..	..	10,035	

TOWN CENTRE.

						acres
	Gross acreage	..	..	..	..	71
	Existing houses: 50 on	..	..	..	..	4
	Existing population	..	..	..	184	
	New population	..	..	..	338	
	Total population	..	..	..	522	

POPULATION OF EXISTING DEVELOPMENT
NOT INCLUDED IN NEIGHBOURHOOD UNITS.

Upper Cwmbran	..	..	..	..	..	106 persons
Springvale	..	..	..	..	..	144
The Woodlands	..	..	..	..	..	124
Forge Hammer	..	..	..	..	..	500
Woodland Street (St. Dials)	..	..	..	..	..	276
Ty-coch Lane	..	..	..	..	..	120
Landowlais Street, Oakfield	..	..	..	..	..	540
Avondale Road (North End)	..	..	..	..	..	140
Pontrhydyrun Road	..	..	..	..	..	284
Grange Road (Lower Pontnewydd)	..	..	..	..	..	260
Grange Road (South End)	..	..	..	..	..	70
						2,564

150. The population figures of the areas listed immediately above are approximate only. 2,011 people out of 2,564 live in 543 obsolete houses which should be pulled down after their occupants have been rehoused in one of the new neighbourhoods. There will then be left only 553 persons living outside the new neighbourhoods.

SUMMARY OF PROPOSALS.

<i>Neighbourhood</i>	<i>Gross Area</i> <i>acres</i>	<i>Net Area</i> <i>acres</i>	<i>Population</i>	<i>Persons</i> <i>per acre</i>
Pontnewydd	315	233	6,080	28.5
Greenmeadow	177	131	3,044	28.0
Coedva	161	136	5,454	40.0
Oakfield	150	111	4,175	37.5
St. Dials	188	145	4,312	30.0
Croes-y-ceiliog	418	342	10,635	29.3
Town Centre	71	—	522	—
	1,480	1,098	34,822	31.7 net

VI. THE TOWN CENTRE

151. The site chosen for the town centre of Cwmbran lies between Grange Road on the east and the Eastern Valleys railway line on the west; it is near the middle of the designated area and covers approximately 71 acres. The site, which is partly flat and partly undulating, falls from a height of 235 ft. at the north-west near Forge Hammer to 115 ft. at the south-east near Grange Road. Most of the land is used for agriculture or recreation but there are some houses along Coronation Road on the west side and some along Grange Road on the east, including Llantarnam Grange.

152. The site appears to be admirably suited for the new town's central area. It is clear of buildings and is geographically in the middle of the proposed development; it lies between the existing settlements of Cwmbran and Pontnewydd, which should facilitate the development of a thriving shopping centre; it is accessible from three existing roads on the north, east, and west, and these roads can all be conveniently linked to the new road system; its size and shape are suitable for the necessary shops, public buildings, roads, car parks, and open spaces; finally, the rising ground at Little Gelli and the well-timbered land to the south offer opportunities for the creation of a significant group of civic buildings overlooking the town park.

153. It has been suggested to us that the proximity of the factories along the east side of Grange Road will prejudice the creation of a satisfactory centre. We have considered the possible effects upon the centre of the noise, fumes, pedestrian, and vehicular traffic likely to arise owing to the presence of these factories and we do not think that they will unduly affect the centre, given careful planning and the use of tree screens at certain points. Fortunately there is already a belt of trees between Grange Road and the centre to the south of Llantarnam Grange. Apart from this, no alternative site for the centre can be found in Cwmbran which would be entirely free from industrial smoke and no other site has so many advantages as the one we recommend.

154. The detailed layout of the central area does not come within our terms of reference, but the areas required must be calculated and the planning of the centre visualized in broad outline before a master plan can be considered satisfactory.

155. We consider that Cwmbran will require space in the town centre for at least the following:—

200 shops.	Bus station.
Town hall.	Post office and sorting office.
Municipal offices.	Telephone exchange.
Central library.	Car parks for 500 cars.
Arts centre.	Roads and open spaces.
Market.	Garages and filling stations.
Police offices.	Two cinemas.
Health centre.	A hotel and inns.
Public hall.	Banks.
Swimming bath.	Government offices.

156. It is suggested that the main shopping area should be concentrated along the 800 yards length of road which forms the spine of the town centre and that the principal public buildings should be grouped around or near two important squares, placed at either end of the main street.

THE CIVIC SQUARE.

157. The town hall, municipal offices, public assembly hall, central library, college of further education, the arts centre, and a hotel might be grouped around the southern square, with a terrace overlooking the town park. This siting should enable a superb architectural group to be planned at a central point where it will be seen to the best advantage; the close association of cultural buildings with those for public administration has also much to recommend it.

SHOPS.

158. The principal shops could be disposed on both sides of the main street except in Coronation Road at the south-west. Here shops along the north-west side only are proposed, screening the service industries behind them and bringing the commercial development of the centre as close as possible to St. Dials neighbourhood. The main shop sites might have an average depth of 100 ft., the layout being on the hollow square principle, so that both car parking space and goods access are provided at the rear. As this street runs north and south both sides of the street will have the advantage of sunshine during some part of the day.

THE NORTHERN SQUARE.

159. At or near the north end of the shopping street a second square is proposed, this being linked to Coronation Road near the Forge Hammer railway arch. Around or adjacent to this square might be placed a department store, the health centre, post office, market, inn, two cinemas, and the police offices, the latter having car access on to the parkway. The bus station might be placed between this square and Grange Road to the north of Llantarnam Grange.

VII. EDUCATION AND HEALTH SERVICES

160. The provision of sites for educational buildings in the Master Plan is in accordance with the latest requirements of the Ministry of Education and has been worked out after consultation with the officers of the Monmouthshire County Council.

161. In locating the schools, the principle followed is to place primary schools near to the neighbourhood centres, secondary modern schools between the neighbourhoods they serve, and the grammar and technical schools, which serve the whole area, on an educational campus in Croes-y-ceiliog to the east of the town centre. Existing schools are not shown coloured on the Master Plan but are indicated on the Land Use Maps. The siting of nursery schools is left to the detail planning of the neighbourhoods.

PRIMARY SCHOOLS.

162. A central location for the junior and infant school serving a residential neighbourhood has several obvious advantages:

1. It is within easy reach—usually one-third of a mile—of the majority of homes.
2. It is away from main traffic routes.
3. Its position near the local shopping centre is convenient for mothers wishing to shop after taking their children to school.
4. It encourages the use of the school hall for adult education or social purposes.
5. The existence of well-designed school buildings helps to raise architectural standards and create a more attractive neighbourhood centre.

163. The particular sites suggested for these schools are described in Chapter V of this Report, beginning on page 19.

SECONDARY MODERN SCHOOLS.

164. Four secondary modern schools have been planned for the ultimate population of 33,000. The Llantarnam school site is placed at the south-east of the area so that it is conveniently accessible from the outlying areas such as Llanfrechfa, Ponthir, and Caerleon which it will have to serve in addition to the Oakfield and St. Dials neighbourhoods within the new town. The site is a clear one of 21 acres and almost flat, falling gently to the south: the entrance to the school would be from the Llantarnam Road.

165. Greenmeadow modern school will serve the south of this area and part of St. Dials and Coedeva. It is an 18-acre clear site on the west of Pen-y-waun Road to the south of the Dowlais Brook.

166. The site proposed for Springvale school is in a saucer-shaped valley lying between Greenmeadow and Mount Pleasant. This area has great possibilities for redevelopment, but is at present spoilt by the ruins of Cwmbran Colliery buildings and a terrace of obsolete cottages. Demolition of the buildings and a few weeks work with bulldozers would make this into a most attractive site for the school and its playing fields, which would be well placed to serve Pontnewydd, the north of Greenmeadow, and part of St. Dials.

167. The fourth modern school, intended to serve the double neighbourhood of Croes-y-ceiliog is sited on the campus, and grouped with the grammar and technical schools. An area of 12.8 acres is proposed for the buildings, the playing fields being sited on the flat land to the west, alongside the river.

THE CAMPUS.

168. The grouping of the boys and girls grammar schools, the technical secondary school, and the modern school on a 70-acre campus at Croes-y-ceiliog gives the new town an educational site of first-rate importance, which should look particularly well from the town centre. The campus is a fine site, well away from the railway and noisy industries and easily accessible from all directions, as it lies between the roads leading to the two new bridges. It is free from buildings but has a fair number of trees: the contours are not too steep for economical building. It is suggested that the four schools might be set in echelon formation facing south-west along the 200 ft. contour, with their playing fields on the flat ground to the west along both sides of the river.

THE COLLEGE OF FURTHER EDUCATION.

169. Further education in Cwmbran will be provided by a college on a 3-acre site near the civic square at the south end of the town centre. It is suggested that this college might be grouped with the public library and an arts centre so as to create the focal point of cultural activities in the new town. The town hall, municipal offices, and public assembly hall would adjoin the group and, together, these important buildings would form an impressive example of civic architecture and planning. Nine acres of playing fields for the college are sited on the flat land near the river, together with those of the four campus schools.

HEALTH SERVICES.

170. The Welsh Regional Hospital Board have no intention of building a hospital specially for the new town as they propose to enlarge the County Hospital, Griffithstown, near Pontypool (approximately 2½ miles from the proposed central area) and to establish a new hospital at Pontllanfraith. If, however, this decision were reversed a suitable site of twenty to thirty acres is to be found near Llanfrechfa Grange on the high ground just outside Cwmbran's eastern boundary.

171. A possible alternative, although less accessible, is the open land at the north-west, between Pontnewydd and Upper Cwmbran.

172. A Health Centre may be expected in Cwmbran, and a site of about 1½ to 2 acres should be reserved in the central area, preferably within easy reach of the bus station.

173. In each of the neighbourhood centres maternity and child welfare clinics are likely to be needed. For economy in administration these might conveniently be grouped with a day nursery and one of the two nursery schools which most neighbourhoods will probably require.

CEMETERIES AND CREMATORIUM.

174. There are at present two cemeteries in the area, in Mount Pleasant and in Oakfield. Two new ones are proposed, bringing the total provision up to 15 acres; one site lies to the west of Greenmeadow in Traneh Wood, and the other is in The Plantation, near the centre of Croes-y-ceiliog.

175. Either of these sites, being surrounded by trees, would appear to be suitable for a crematorium. If this is provided, it will undoubtedly serve a much wider area than that of the new town so that the Croes-y-ceiliog site, being more accessible, seems to be the better of the two.

LIST OF EXISTING SCHOOLS IN THE DESIGNATED AREA.

<i>School</i>	<i>Ages</i>	<i>Pupils</i>
Upper Cwmbran Mixed County	5-15 ..	218
Cwmbran St. Dials County	7-15 ..	305
Cwmbran St. Dials Girls County	7-15 ..	308
Cwmbran St. Dials Infants	5-7 ..	235
Cwmbran Two Locks Nursery	2-5 ..	51
Henllys County	5-15 ..	51
Croes-y-ceiliog Mixed County	5-15 ..	156
Pontnewydd Voluntary	5-7 ..	107
Pontnewydd Mixed Voluntary	7-15 ..	261
Cwmbran R.C. Mixed	7-15 ..	127
Cwmbran R.C. Infants	5-7 ..	36
Llanfrechfa Lower Voluntary	5-11 ..	36
		1,891 pupils

176. The future of these schools is uncertain but it is probable that as the town grows and new schools are built some of them will be found redundant. In these cases the buildings may prove to be suitable for converting into clubs, clinics, libraries, or community centres, and this possibility should be borne in mind.

THE COLLEGE OF FURTHER EDUCATION.

169. Further education in Cwmbran will be provided by a college on a 3-acre site near the civic square at the south end of the town centre. It is suggested that this college might be grouped with the public library and an arts centre so as to create the focal point of cultural activities in the new town. The town hall, municipal offices, and public assembly hall would adjoin the group and, together, these important buildings would form an impressive example of civic architecture and planning. Nine acres of playing fields for the college are sited on the flat land near the river, together with those of the four campus schools.

HEALTH SERVICES.

170. The Welsh Regional Hospital Board have no intention of building a hospital specially for the new town as they propose to enlarge the County Hospital, Griffithstown, near Pontypool (approximately $2\frac{1}{2}$ miles from the proposed central area) and to establish a new hospital at Pontllanfraith. If, however, this decision were reversed a suitable site of twenty to thirty acres is to be found near Llanfrechfa Grange on the high ground just outside Cwmbran's eastern boundary.

171. A possible alternative, although less accessible, is the open land at the north-west, between Pontnewydd and Upper Cwmbran.

172. A Health Centre may be expected in Cwmbran, and a site of about $1\frac{1}{2}$ to 2 acres should be reserved in the central area, preferably within easy reach of the bus station.

173. In each of the neighbourhood centres maternity and child welfare clinics are likely to be needed. For economy in administration these might conveniently be grouped with a day nursery and one of the two nursery schools which most neighbourhoods will probably require.

CEMETERIES AND CREMATORIUM.

174. There are at present two cemeteries in the area, in Mount Pleasant and in Oakfield. Two new ones are proposed, bringing the total provision up to 15 acres; one site lies to the west of Greenmeadow in Tranch Wood, and the other is in The Plantation, near the centre of Croes-y-ceiliog.

175. Either of these sites, being surrounded by trees, would appear to be suitable for a crematorium. If this is provided, it will undoubtedly serve a much wider area than that of the new town so that the Croes-y-ceiliog site, being more accessible, seems to be the better of the two.

LIST OF EXISTING SCHOOLS IN THE DESIGNATED AREA.

<i>School</i>	<i>Ages</i>	<i>Pupils</i>
Upper Cwmbran Mixed County	5-15 ..	218
Cwmbran St. Dials County	7-15 ..	305
Cwmbran St. Dials Girls County	7-15 ..	308
Cwmbran St. Dials Infants	5-7 ..	235
Cwmbran Two Locks Nursery	2-5 ..	51
Henllys County	5-15 ..	51
Croes-y-ceiliog Mixed County	5-15 ..	156
Pontnewydd Voluntary	5-7 ..	107
Pontnewydd Mixed Voluntary	7-15 ..	261
Cwmbran R.C. Mixed	7-15 ..	127
Cwmbran R.C. Infants	5-7 ..	36
Llanfrechfa Lower Voluntary	5-11 ..	36
		1,891 pupils

176. The future of these schools is uncertain but it is probable that as the town grows and new schools are built some of them will be found redundant. In these cases the buildings may prove to be suitable for converting into clubs, clinics, libraries, or community centres, and this possibility should be borne in mind.

LIST OF NEW EDUCATIONAL SITES

<i>Schools</i>	<i>Remarks</i>	<i>Acres</i>	<i>Location</i>
Nursery Schools ..	About 15, on 1.3 acre sites.	5	Distributed in neighbourhoods.
Infant and Junior		7	Pontnewydd.
Infant and Junior		7	Greenmeadow.
Infant and Junior		6.5	St. Dials.
Infant and Junior		6	Coedeva.
Infant and Junior		6.5	Oakfield.
Infant and Junior		7	Croes-y-ceiliog North.
Infant and Junior		7	Croes-y-ceiliog South.
Secondary Modern		18	Springvale, between Pontnewydd and Greenmeadow.
Secondary Modern		18	Pen-y-waun Road, between Greenmeadow, St. Dials, and Coedeva.
Secondary Modern		21	Llantarnam, in southern part of Oakfield neighbourhood.
Secondary Modern		12.8	On Campus.
Grammar School		12.6	On Campus.
Technical School		23	On Campus.
College of Further Education	Playing fields east of main line	3	Adjoining civic square.
Playing fields ..	For use of all secondary schools on campus and the College of Further Education	23.5	To west of Campus.
		183.9 acres	

SUMMARY.

Nursery schools	..	..	15
Junior-Infant schools	..	..	7
Secondary Modern schools	..	..	4
Boys Grammar school	..	..	1
Girls Grammar school	..	..	1
Technical Secondary school	..	..	1
College of Further Education	..	..	1
			30 educational sites

VIII. PLAYING FIELDS AND PLAYGROUNDS

177. Land required for games in the New Town may be considered under five headings :—

- a. School playing fields.
- b. The town sports ground.
- c. Neighbourhood playing fields.
- d. Children's playgrounds.
- e. Private playing fields.

178. The provision of public, private, and school playing fields on a scale appropriate to a population of 35,000 is a difficult matter in the Cambrian area owing to the scarcity of flat sites except in the valley of Afon Lwyd. Apart from the principal difficulty of finding suitable land after satisfying the needs of educational buildings which require 184 acres, the location of the new playing fields and the scale on which they should be provided cannot easily be decided now owing to uncertainty about the future organisation of games and recreational needs of the New Town.

179. At the present time several industrial firms have their own private sports grounds and well-organized cricket and football teams. That these firms are performing a valuable service to a large number of the existing population by providing playing fields and facilities is not in doubt. It is equally certain that with the increase of population from 13,000 to 35,000 there will be many people not employed by these firms for whom recreational facilities must be provided.

180. Apart from school playing fields, a total area of 176.4 acres is proposed for public and private playing fields.

SCHOOL PLAYING FIELDS.

181. In preparing the Master Plan we have given first choice to school playing fields, as the sites for these, especially the primary schools, must be located in relation to the population they serve. Particulars of these sites have been given in Chapter VII.

TOWN SPORTS GROUND.

182. Next in importance comes the town sports ground for which a central site is clearly required : this has been located alongside the river and covers 18 acres. Lying between the two bridges it is readily accessible and has ample room for a swimming pool, a stadium, car parks, and all other essentials.

NEIGHBOURHOOD PLAYING FIELDS.

183. Public playing fields and children's playgrounds are proposed in each residential neighbourhood on the scale of 3.5 acres per 1,000 population, giving a total area of 122.3 acres, which includes existing playing fields. In suggesting this figure we have had regard to the fact that 54 acres for the town sports ground and industrial playing fields are also provided. Playing fields should not be smaller than four acres : where the contours permit, two sites of seven or eight acres each would be conveniently placed, one on each side of the neighbourhood near the perimeter. Housing which adjoins a neighbourhood or school playing field should wherever possible be planned to overlook the open space, even though this may involve the use of a perimeter road to give access to the houses.

CHILDREN'S PLAYGROUNDS.

184. Children's playgrounds will normally be small—say $\frac{1}{2}$ to 1 acre—and should be distributed throughout the neighbourhoods in such a way that no young child has far to go from its home to a playground. The precise sites of these playgrounds will only be settled when the detailed plans of the neighbourhoods are prepared and they are, therefore, not shown on the Master Plan.

PRIVATE PLAYING FIELDS.

185. Apart from the Rugby Football Ground in Pontrnewydd, which will remain, no private playing fields are shown within the residential areas : this is merely because the requirements for private schools, tennis, and bowling clubs are not yet known. Some allocation for these purposes may prove to be necessary when the stage of detailed planning is reached.

186. There are five private playing fields belonging to industrial firms. Guest, Keen and Nettlefold's have 8.8 acres between Coronation Road and the Eastern Valleys Railway Line at the south-west corner of the new town's centre : this important site will have to be acquired for service industry. Girdling's ground of 9.5 acres east of Grange Road is about to be used for an extension of their works. Saunders Valves' ground of 1.75 acres between their buildings and Grange Road is also to be used shortly for a new extension. Here are twenty acres lost to recreation for which alternative sites could be provided in the riverside land to the east of the main railway line. For this purpose three sites totalling 16.9 acres have been reserved in the Master Plan, and an additional 22.5 acres in Llanfreschfa Park could be used if required.

187. The brickworks of Whitehead and Landowlaia share a ground of 5.46 acres near the canal : we should like to see this pleasant ground maintained, especially as it will be enhanced by improvement of the canal. If the ground is ever excavated for brick earth it is important that it should be properly reinstated and planted.

188. The last industrial playing field is of 13.8 acres belonging to Westons Biscuits. We recommend that this ground should be retained as a playing field, and only built on when all other land reserved for industry is occupied. The total area of industrial playing fields retained (19.2 acres), and proposed (16.9 acres) thus amounts to 36.1 acres.

IX. PARKS

189. A reservation of 323 acres of land for parks has been made in the Master Plan, so that the total allowance of open space for parks and playing fields, exclusive of school playing fields, amounts to 425 acres or 12 acres per thousand population.

LLANFRECHFA PARK.

190. It is suggested that 149 acres of riverside land at the south-east of the area, lying between the trunk road and the main railway line, should be reserved as a park. Much of this land is flat and could be used for tennis, bowls, and other games. Llan-yr-afon Farm is near the centre of the area and might be redeveloped as a sports club and tearoom to serve the park. Footbridges over the river would be required at the north and south and the planting of weeping willows along the river would add to the attractions of the area as an open space.

CENTRAL PARK.

191. Between Grange Road and Coronation Road at the south of the town centre there are 17.7 acres of pleasantly timbered parkland falling about 40 ft. from Little Gelli towards the south and traversed by the Cwmbran brook. Within this area it is proposed that the principal civic buildings and an educational group should be sited on the higher ground with a terrace on the south side, and that the remainder of the land to the south should become a central park. The park will thus provide an attractive open space within a few yards of the main shopping area, a dignified setting for Cwmbran's most important public buildings and a pleasant approach to the town centre.

THE GARDEN OF REMEMBRANCE.

192. The Garden of Remembrance at the south of St. Dials neighbourhood is a well-kept open space which should be retained. It is thought that the Parkway can cross Cocker Avenue at this point without disturbing the existing bowling green.

CANALSIDE SOUTH.

193. It is proposed that a narrow strip of land on both sides of the disused Monmouthshire and Brecon Canal totalling 13.3 acres should be redeveloped as canalside gardens with trees and greens. The area suggested for this treatment extends from the bridge in Commercial Street, Cwmbran, southwards to Landowais Street, Oakfield, at which point the canal enters the open land owned by Whitehead's brickworks. Canalside South will thus make a pleasant green link between St. Dials, the Garden of Remembrance, the parkway, and the open country at Ty-coch Lane.

CANALSIDE NORTH.

194. From Five Locks, Pontnewydd, the canal falls southwards between tall trees and winds past two recreation grounds to reach the parkway near Nightingale Row. It is suggested that this part of the canal, covering 12.4 acres, should be redeveloped as a greenway through Pontnewydd making a delightful walk from the town centre to the northern green belt.

MOUNT PLEASANT PARK.

195. Between Mount Pleasant Road and the canal the contours fall steeply to the north and the ground is unsuitable for economic housing. We suggest that a 13 acre strip of land here running east and west and connected to the existing recreation ground should be reserved for development as a small park. This park will provide a green wedge from the open land on the west of Pontnewydd to a point close to the Commercial Street shopping centre.

SPRINGVALE PARK.

196. To the north of Guest, Keen and Nettlefolds foundry lies Church Wood and the rough ground to the east and west of it. We suggest that the reclamation of the whole of this area of 57 acres and of the Springvale secondary modern school site is quite practicable with modern equipment and that the two areas should be dealt with as one operation when the route for the new parkway is being made. With imaginative landscaping it would be possible to create here a public open space of an unusual character; its position athwart the parkway between Pontnewydd and the town centre should make Springvale Park a popular recreation centre.

197. It is not suggested that all these parks, even if accepted in principle, will be developed for some years, but it is hoped that the land will be reserved for the purpose until the town's open space needs are more clearly seen and economic conditions permit the necessary expenditure.

GREENWAYS AND CYCLE TRACKS.

198. As a general principle in development, every effort should be made to link together parks, gardens, playing fields, the river, the canal, woods, and other open spaces so as to facilitate the planning of greenways and cycle tracks in a comprehensive landscape system covering the whole town. In achieving this the parkway itself, by extending the greenery between the built-up areas, should play an important and attractive part.

THE RIVERSIDE LAND.

199. Apart from the above proposals for parks we recommend the preservation as an open space of a strip of riverside land right through the designated area from north to south. Some of this land will be used as parkland or playing fields: the remainder should, if possible, be used for agricultural purposes. The whole of the land between Afon Lwyd and the railway is now open except at one point, by Lower Pontnewydd bridge, where there are some cottages and farm buildings. These should be removed when the time comes to rebuild the bridge over the river and straighten Black Road: the site should then remain open for all time.

X. ARCHITECTURE AND LANDSCAPE

200. It is unfortunate that Cwmbran's designated area contains so few buildings which may claim to be called architecture. In 1949 the Ministry of Town and Country Planning prepared a provisional list of buildings of architectural or historic interest for consideration in connection with the provisions of Section 30 of the Town and Country Planning Act, 1947. This list contains only eighteen items within the whole designated area as follows:—

GREENMEADOW.

Greenmeadow Farm	..	..	..	..	..	..	17th century.
Barn to the above	..	..	..	..	..	..	1723.

LLANTARNAM.

St. Michael's Church	..	..	..	..	..	..	15-16th century.
Churchyard Cross	..	..	..	..	..	..	Mediaeval.
The Greenhouse Public House	..	..	..	..	..	..	1719.
Brook House	..	..	..	..	..	..	Early 19th century.
Abbey Cottages (Nos. 1-4)	..	..	..	..	..	..	18-19th century.
Coopers Arms Cottage	}	..	..	..	..	..	17-18th century.
Bambrook Cottage		..	..	..	..	..	

UPPER CWMBRAN.

Bethel Chapel	..	..	..	..	..	..	Early 19th century.
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CROES-Y-CEILIOG.

Turnpike House	..	..	..	..	..	..	19th century Gothic.
Thatched Cottage (next to Highway Garage)	..	..	..	..	..	..	
Thatched Cottage (Poultry Farm)	..	..	..	..	..	..	
Jim Crow's Cottage	..	..	..	..	..	..	19th century Gothic.

CWMBRAN.

Llan-yr-afon Farm	..	..	..	..	..	..	Early 17th century.
Barn to the above	..	..	..	..	..	..	

PONTNEWYDD.

Pontnewydd Houses (Nos. 2-8)	..	..	..	..	..	..	Early 19th century.
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PONTRHYDYRUN.

Baptist Chapel	..	..	..	..	..	..	1836 Greek.
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201. Apart from these old buildings, which should be retained, and one or two new ones, including some of the modern factories, the standard of architecture in the area is generally low.

202. From some points of view, it is unfortunate that so many of the buildings, though architecturally bad, are constructionally sound and will last for many years. There is, however, no need to assume that the appearance of the new town will be spoilt by the existing development as the worst areas should be cleared and rebuilt before long, and the remainder, if they are screened by new buildings or by trees, will be far less noticeable. It is assumed that the new town will be built in accordance with the highest standards of modern architecture and it is fortunate that excellent, clear, and prominent sites are available for the new public buildings and schools which Cwmbran must have and that it will be possible to plan a commercial and administrative centre which will be wholly new. Both the central area and the Croes-y-ceiliog campus provide exceptional opportunities for fine architectural groups, and much will depend upon the way in which these opportunities are seized.

203. In the neighbourhood centres it should be possible to obtain something of the charm of the typical village green, with a group of shops, a hall, a church or chapel, one or two inns, and the primary school. The school, as the largest building in the group, will be particularly important and the successful design of these centres will depend upon close co-operation between the Chief Architect to the Corporation and the County Architect in the planning stage.

204. Apart from its architecture—or lack of it—the Cwmbran area has other features which require special consideration, such as scattered industrial sites, brickworks, derelict claypits, slag-heaps, a disused canal, colliery ruins, and other obsolete buildings. To develop a town that will be aesthetically satisfying in such an area, it will be necessary to deal with these defects; it is possible to indicate here some of the ways in which these difficulties may be overcome.

205. The fact that much of the development which one would wish to screen is on rising ground and is thus visible from afar, emphasizes the need to give particular attention to the landscape and three-dimensional aspects of the town.

206. Terrace housing built along the contours will be particularly suitable for use on high ground, as the long sweeping roof lines merge into the landscape and avoid the ragged effect often produced by detached housing.

207. The unsatisfactory appearance of the straggling Crown Road development and of the prefabricated housing schemes on the hillsides at Pontnewydd and Coedeva shows how important it is to consider the form and colour of any buildings to be placed on elevated sites. As regards Crown Road, it is thought that carefully designed infilling with new houses might effect an improvement to this part of the skyline. In the case of the prefabricated houses the planting of trees around the site would go far to mitigate the barren appearance of these groups.

208. Such ugly features as the slag heaps of Panteg steelworks, now approaching the designated area at an alarming rate, the gas holders at Forge Hammer, and many of the industrial buildings should be screened by trees.

209. In our view, the Corporation would be well advised to investigate now the cost of providing the essential tree screens required to hide these eye-sores, and it might be possible to plant some of the more urgently needed screens within the next two or three years so that their growth is well established when the town is completed. It is assumed that an organization similar to a municipal Parks Department will be required for the maintenance of front lawns, roadside strips, communal greens, parks, playing fields, woods, trees, and public pleasure gardens. Such an organization might find it economic to establish its own nursery and be responsible for the production and planting, as well as the maintenance, of all trees within the town.

210. The attention of the Corporation is drawn to the fact that a great variety of trees of striking and colourful habit are now available which are entirely suitable for planting in urban areas. There appears to be no reason why Cwmbran should not become as well known for its trees as Cardiff for its civic centre and Chester for its Rows. We, therefore, suggest that the principal roads in Cwmbran should each have a different scheme of tree planting, intended to create attractive displays of blossom or foliage at different times of the year.

211. In this connection the experience and advice of the Roads Beautifying Association on the choice of suitable varieties of trees is likely to be particularly valuable.

STREET FURNISHINGS.

212. Attention is drawn to the importance of obtaining architectural advice on the design of street furnishings and their size and position in relation to the adjoining buildings. The new town of Cwmbran might surely have its own individual designs for such important accessories as lamp standards, name plates, bus shelters, signboards, litter baskets, clocks, seats, railings, and other common features in the urban scene. It is unlikely that good results will be obtained by selecting such furnishings from manufacturers' catalogues.

213. Details which may add to the convenience and safety of the public are specially coloured pedestrian crossings and parking places, sloping kerbs for perambulators, parking racks or slots for bicycles (possibly with penny-in-the-slot locking devices), a map of the town in the civic square, and continuous glass canopies over part of the footway in the shopping areas.

214. It is to be hoped that, even in these days of austerity, some provision may be made for those attractive features of continental towns which add so much to our enjoyment of them. The introduction of free standing or applied sculptures, fountains, seats, flower-boxes, kiosks, flag-poles, mural paintings, wrought ironwork or floodlighting, will give charm and character to the new town and permanent pleasure to its inhabitants. It is suggested that the example of America, which is now being followed by a number of English counties, might be adopted by Cwmbran, by which the modest sum of half of 1 per cent of the total cost of each public building might be set aside for the adornment of the building with works of art or craftsmanship.

CONTROL OF ADVERTISEMENTS.

215. To create a new town of beauty in Cwmbran is surely a worthy objective. If it is to be achieved strict control of advertisements is essential and the Town and Country Planning Act, 1947, provides the necessary machinery and powers.

THE ENTRANCE TO THE TOWN.

216. It is suggested that the four main approaches to the town from the north, east, and south might be marked by pylons or a signpost bearing the arms and name of the town.

SUMMARY OF PROPOSALS

COMMUNICATIONS.

- 217. A new southern approach road to the town centre leaving the trunk road at the Three Blackbirds and by-passing the Oakfield residential area.
- 218. A new northern approach from the trunk road to join Avondale Road at Pontrhydyrun.
- 219. A new road from the centre of Cwmbran to the Caerleon Road.
- 220. A parkway around St. Dials to link the rest of the town with the central area.
- 221. New rail and river bridges to improve cross-town communications.
- 222. Main traffic routes planned so that they do not pass through the residential areas.
- 223. A bus station between Grange Road and the main shopping area.
- 224. A helicopter landing ground near the town centre.

RAILWAYS.

- 225. The enlargement of the Cwmbran goods yard and the removal of its entrance from Victoria Street to the south.

INDUSTRY.

- 226. The reservation of 60 acres of land for the expansion of the manufacturing industries.
- 227. New areas for service industry at Coronation Road, Avondale Road, and Forge Hammer.
- 228. The reclamation of worked-out clayspits by filling with slag from Panteg Steel Works and their use for playing fields.

RESIDENTIAL AREAS.

- 229. Seven residential neighbourhoods each with its own local centre.
- 230. Each neighbourhood to have playing fields, primary school, playgrounds, allotments, shops, and community buildings.
- 231. A variety of dwellings suitable for all sizes and kinds of families to be provided in each neighbourhood.

THE TOWN CENTRE.

- 232. The planning of a new shopping and administrative centre on a clear and prominent site between Pontnewydd and Cwmbran.
- 233. Important groups of public buildings at each end of the main shopping street.

EDUCATION AND HEALTH SERVICES.

- 234. Fifteen nursery schools distributed throughout the neighbourhoods.
- 235. A junior-infant school sited in the centre of each neighbourhood.
- 236. Four secondary modern schools, planned between the neighbourhoods they serve.
- 237. An educational campus with four secondary schools on a 70-acre site on the western slopes of Croes-y-ceiliog.
- 238. A college of further education grouped with the public library and an arts centre, overlooking the park in the town centre.
- 239. A Health Centre in the middle of the town and clinics at each neighbourhood centre.

PLAYING FIELDS.

- 240. The provision of 122 acres of public playing fields and children's playgrounds, or three and a half acres for every 1,000 people, distributed throughout the town.
- 241. A town sports ground of 18 acres near the town centre.
- 242. The reservation of 36 acres of land for industrial playing fields.

PARKS.

- 243. Four new parks sited (a) to the south of the town centre; (b) at Church Wood, Pontnewydd; (c) by the river at Llan-yr-afon Farm; and (d) in Mount Pleasant.
- 244. The redevelopment of the canal through Pontnewydd and from St. Dials to Oakfield as a park strip or canalside gardens.

ARCHITECTURE AND LANDSCAPE.

- 245. The planning of two important groups of public buildings at the north and south ends of the main shopping street.
- 246. Particular attention should be given to the screening of ugly development and eyesores, such as the gas holders at Forge Hammer, the slagheap at Panteg steel works and the derelict clayspits.

MAPS AND DRAWINGS AVAILABLE

<i>Surveys</i>						<i>Mileage Scale</i>
Boundary and contours	..	..	..	..	..	12,672"
Geological survey	..	..	..	..	..	6"
Density of present accommodation	..	..	..	..	..	6"
Density of present population	..	..	..	..	..	6"
Distribution of present population	..	..	..	..	..	6"
Agriculture	..	..	..	..	..	6"
Green Belt	..	..	..	..	..	2,534"
Land use	..	..	..	..	..	12,672"
Land use	..	..	..	..	..	25,344"
Land available for building	..	..	..	..	..	6"
Age of buildings	..	..	..	..	..	6"
Obsolete housing	..	..	..	..	..	6"
Location of industry	..	..	..	..	..	6"
Location of industrial workers' homes	..	..	..	..	..	1"
Gas	..	..	..	..	..	6"
Water supply and sewerage	..	..	..	..	..	6"
Gas and electricity	..	..	..	..	..	6"
Sewerage	..	..	..	..	..	6"
Water	..	..	..	..	..	6"
Electricity	..	..	..	..	..	6"
Diversion of Trunk Road	..	..	..	..	..	25,344"
New northern approach road	..	..	..	..	..	25,344"
New southern approach road	..	..	..	..	..	25,344"
Set of vertical air photographs of designated area	..	..	..	..	..	12,672"
Contour model of designated area	..	..	..	..	..	12,672"

SUMMARY OF LAND USE:

The designated area contains	..	..	..	..	..	3,100 acres
The developed perimeter contains	..	..	..	..	..	2,651 acres
Town centre	..	..	..	..	..	71.0
Residential (net)	..	..	..	..	..	1,099.6
Neighbourhood centres	..	..	..	..	..	43.3
Industrial	..	..	..	..	..	285.2
Service industries	..	..	..	..	..	33.0
Educational	..	..	..	..	..	183.9
Playing fields and town sports	..	..	..	..	..	176.4
Parks	..	..	..	..	..	259.1
Railways	..	..	..	..	..	57.0
Major roads	..	..	..	..	..	87.5
Cemeteries	..	..	..	..	..	15.0
Woodlands, streams, and land unsuitable for buildings						340.0
						2,651 acres

The overall gross density is 13.2 persons per acre.



AERIAL VIEW OF CENTRAL AREA