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"AN OUTLINE OF TOWN PLANNING."

By

U. AYLMER COATES, B. ARCH., A.R.I.B.A., A.M.T.P.I.,
PROVINCIAL TOWN PLANNER.

Town-planning has been described as the conscious harmonizing of the several elements composing a town and is one of the first exercises in which a pioneer mind engages. It is not merely a matter of planning streets or placing restrictions on the size of sites attached to various types of buildings but is, broadly speaking, the allocation of land to its best economic use, the proper relation between buildings of different use and design, the improvement of existing conditions of habitation and securing that development functions not only from the utilitarian point of view but is also artistically satisfying.

The oldest town known to exist is Kahun in Egypt, built about 2500 B. C. It is a small town of about 20 acres which was probably used for housing the workmen engaged on the building of a neighbouring pyramid. There is nothing dynamic about its lay-out except that it affords an example of the grid-iron plan a system of planning which has persisted in various forms and at different times for 4000 years and appears in the cities of America, the By-law towns of the last century in the north of England, the Cantonments of India the new *abadis* of Lahore, and the new colony chaks in Punjab.

A possible explanation of its universal adoption at various stages of history is that its simplicity, regularity, and speed of building might appeal to the military mind since most towns of a military foundation illustrate its principles.

It has certain obvious drawbacks, the chief of which are that it lacks scope for artistic expression and when

the town develops on a large scale there is no direct connection across the diagonals of the 'insulæ' enclosed by the streets. (See Fig. 1). In modern American plans, for example at Washington and Philadelphia, the radials of renaissance planning are super-imposed on the traditional American grid-iron with resulting awkward triangular shapes difficult to develop economically and producing towns lacking in focal points. Not always was the grid-iron plan entirely devoid of interest. The Greeks of the 5th Century B. C. for instance introduced the processional highway and produced the acropolis and the agora, the first housing the temples and the second the markets.

Most of the *abadi* schemes of development proposed in Lahore consist of grid-iron planning in its most uneconomical and inartistic form having numerous chess-board streets of narrow widths enclosing building plots. The streets are neither wide enough for principal means of access nor for securing satisfactory ventilation of houses since in those schemes houses have been erected mostly of the back-to-back type which have been illegal in England since the Public Health Act of 1875. Another type of town-plan is the radial plan (see Fig. 2) and the major roads of Lahore city in so far as they are capable of classification, might be said to produce a radial plan. Generally speaking the arteries of Lahore are showing signs of ribbon development (*cf.* Ferozepur Road) the intervening spaces remaining comparatively vacant and without satisfactory cross-country links between the radials. This is unnecessarily wasteful as through traffic is obliged to use the same town roads as are used by traffic having its destination as Lahore. The better solution is a combination of the radial and ring road as illustrated in figure 3. The schematic plan of Paris illustrates ring-radial principles with ring roads following the lines of successive fortifications as also does Vienna with its Ringstrasse. London is now developing ring roads as for instance the North Circular Road and the North Orbital. A diagrammatic scheme for Lahore is shown in figure 6 which will be described in greater detail later, but it may be noticed now that one of its features is the provision of connections between its various radial roads these

connections to a large extent following existing *kacha* tracks avoiding thereby the severance of ownerships.

Two examples of the recent establishing of completely new towns should be mentioned. The first is Canberra (Fig. 4) the capital of Australia and the second New Delhi. The site selected for Canberra displayed unusual opportunities for skilful lay-out being situated in a shallow valley curving north and south-west. Zoning is carefully thought out ; industry, markets, administration, and residence being each planned in octagonal ring-radial form with main roads connecting each group. Although different land uses are, as they should be, segregated they are bound together by axial routes. New Delhi (Fig. 5) has good terminal features to its main axes north to south and east to west. The general plan is one following the renaissance system of triangulations with numerous awkward shaped junctions as a result.

The history of recent efforts at town-planning in Lahore may be said to have commenced in 1917, when the late Professor Geddes prepared a report accompanied by plans for the Lahore Municipal Committee. The value of these plans may not have been realised at the time since they were apparently lost after being used as wall decoration for the Town Hall.

A few copies of the report are, however, still in existence and contain valuable material for those concerned with town improvement in Lahore, but there is no record of any action having been taken on its recommendations.

In 1919, the Lahore Civil Station Improvement Committee was inaugurated and made several recommendations, one of the most important being to point out that the existing maps of Lahore were inaccurate and were technically useless since they were out-of-date, with the result that Lahore Municipality bore the cost of the production of fresh survey maps by the Government of India Survey Department. These are still in use and although they have now become considerably out-of-date since they were first published in 1927, without them, it would be impossible to do any comprehensive planning of Lahore. This committee also made recommendations in

respect of the amendment of the Punjab Municipal Act, the provision of footpaths to certain major roads in Lahore such as Ferozepur, Jail and Lawrence Roads, the improvement of several road-crossings and the improvement of the surroundings of Government buildings and the removal of advertisements, notices etc., on P. W. D. buildings.

A new committee, the Lahore Improvement Committee was formed in 1929 and carried on the advisory work of the Civil Station Improvement Committee. It did quite a lot of useful work in the laying down of frontages and the control by the Municipality of buildings erected along the Mall. It made one very useful comment on the subject of the qualifications of practising architects and surveyors, although it is only in recent times that the Lahore Improvement Trust has instituted a panel of persons it considers qualified to prepare town-planning schemes. This particular provision is persuasive in character unlike those of Great Britain and several Dominions. There is not, in fact, any legislation in the Punjab prescribing the minimum qualifications for persons entitled to use the term "architect" or for that matter "engineer." This is all the more remarkable considering the exacting standards laid down for recruitment into Government Service and a suggestion is made that the quality of lay-out and building work in Lahore will not improve as speedily as it ought to do until such time as a system of registration and the laying down of minimum qualifications for practitioners is introduced.

The Lahore Improvement Trust, which has functioned since 1936 is partly executive and partly advisory in character. On behalf of the municipality or the Commissioner the Trust prepares town-planning schemes and building schemes under Section 192 of the Punjab Municipal Act, 1911. Its work in this respect consists mainly in the regulation and control of lay-out and building operations initiated by private individuals. In this connection, it does not itself, do any positive work but merely lays down standards to which the private developer must adhere if and when he chooses to develop. This process, it must be admitted, has not so far materially

encouraged decentralization of the congested areas and only about 5% of the area now subject to operative town-planning schemes in Lahore has been developed. Its other function under the Punjab Town Improvement Act, 1922, will eventually, it is expected, involve work of positive improvement of the existing town. The method adopted by the Trust in this respect is somewhat indirect in character. It is proposing first of all to acquire land in the more outlying districts and develop those according to standards which it has laid down and which will subsequently be described. In so doing it is anticipated that a profit will be made which will be subsequently used in the performing of surgical operations on the existing congested localities which it is hoped will, in the meantime, have partially emptied themselves into the new areas. Its actual work in this respect consists so far in the notification of five areas involving about 300 acres of land and situated outside the periphery of the built up area of Lahore. The Trust has already acquired one area of about 17 acres situated at the Old Rifle Range, Multan Road. and is now completing a development scheme which will provide for metalled roads, open spaces, preservation of trees, provision of water-supply and drainage facilities and the allocation of building sites of about 15 *marlas* each.

There is little evidence that what might be called the moral aspect of the subject of town-planning and housing, has been considered in Northern India. The initial finance involved is probably the stumbling block. There is not, for instance, any scheme in the Punjab comparable with slum clearance and re-housing activities in Europe. The approach to this subject is in the first place sociological in character and subsequently one of planning and design. Leading business firms in the west regard the housing of their workers as an integral part of their business concerns, since it can be shown that decent housing and planned development produces a more productive and contented worker. The Lahore Improvement Trust is, in this respect, at some disadvantage even compared with other Trusts in India since it has started somewhat late in the field, when land values have reached limits out of all proportion to their original agricultural

level. It will not be possible for the Trust completely to change the face of Lahore, but it can and will prevent the repetition of past mistakes although it must be admitted that it will probably do so with considerable opposition from the public who will ultimately benefit. Many owners of land regard for instance the provision of an open space in their lay-out as the loss of so much potential building land but eventually the consuming public will prefer the well laid-out areas with adequate width of roads and open spaces.

The actual process of planning may be divided into three stages :

(*i*) The collection of data which properly examined and analysed produces a factual basis for the preparation of the plan.

(*ii*) The preparation of the plan itself, and

(*iii*) The operation and execution of it.

The necessity for research and the sifting of data obtained is not fully appreciated. For instance, town-planning schemes prepared by local bodies throughout the Punjab generally show inadequate consideration for the larger demands of the area of which a particular scheme forms a part. What might be a satisfactory scheme for a small area falls to the ground when it is surrounded by other schemes without any means of through connection.

As to what a civic survey on which a plan is based should include, at least the following factors should be examined :—

(*i*) Historical survey particularly with reference to any planning progress.

(*ii*) Survey of buildings of artistic or historic interest.

(*iii*) Physical features of the area.

(*iv*) Nature of the sub-soil.

(*v*) Existing facilities in respect of passive and active recreational areas.

(*vi*) Civic buildings and educational buildings.

(*vii*) Movements of population.

(*viii*) Birth and death rate.

(*ix*) Prevalence of disease.

(*x*) Infantile mortality.

(*xi*) Survey of transport facilities by road, rail or air.

(*xii*) Drainage, water and electricity services and examination in consultation with proper departments as to what future areas can be economically served.

(*xiii*) Existing surface utilization, and

(*xiv*) Land values.

Having collected and systematised the required data, which to a large extent is already in existence in various Government and Municipal offices, the process of laying down a regulative planning scheme by controlling clauses and maps is considerably simplified.

In deciding what provisions, as compared with planning scheme in the west, normally to include in schemes, it has been necessary to bear certain factors mentioned below in mind :—

1. The wide diversity of types of traffic to be accommodated in the Punjab and the reduced flexibility of movement on its highways.

2. The tendency of the developer to provide too many roads of inadequate width, a system of planning which is wasteful of land to the landowner and costly in maintenance, lighting and policing from the public point of view.

3. The density of population per house is high and the internal organization of the home is completely different.

4. The sanitary arrangements both internal and external are comparatively primitive.

5. The extremes of climate.

6. The lack of rainfall and wind to activate and purify the air.

7. The small amount of natural vegetation which provides shade and acts as a purifying agent.

8. The large number of domestic animals, birds, cattles, and live stock in built up areas.

Schemes now generally provide some or all of the following matters :—

1. *The density of development.* This is generally done by actual plot planning, or by the stipulation of a minimum size for plots. In new *abadi* areas this size is from 7 *marlas* upwards although this size of plot is only justified where the amount of land available for simultaneous development is small or there is other land in the neighbourhood already developed inconsistently or the land has previously been divided up on a small ownership basis. In areas allocated for detached dwelling houses the zoning will probably range from 4 to 15 *kanals* for each plot.

2. *Open spaces.* Section 192 of the Punjab Municipal Act, 1911, enables the transfer to the municipality of 20% of any one owner's land for public purposes while 10% may be transferred without the payment of compensation. The ordinary estate streets of a development scheme are not streets required for public purposes but are private streets laid out to enable development of the land and they should not become a public charge until they are subsequently taken over by the municipality after having been made up to the required specification under the provisions of Section 171 of the Act. As a general rule, therefore, the whole of the 10% which can be transferred without compensation is reserved as open space. This particular provision is not entirely scientific as it is not related to the number of houses to be built in the area. Without it, however, only a few owners would voluntarily provide recreational open spaces in their lay-outs and as an empirical rule it is useful. The proportion of land in new development schemes in Lahore absorbed by private streets is about 30% and by open spaces about 10%.

3. *Widths of streets.* Street widths for estate development should be related to the type of buildings to be

served, lengths of streets, nature and number of accesses and junctions with other roads. A suggested schedule of subsidiary streets for use in residential areas is given below. It has been based on the English model but adopted to suit conditions in Lahore and is now normally used in preparing town-planning schemes. It does not, of course, follow that a street which complies with the schedule is necessarily a well-planned street. Site planning comes first and the various widths may then be determined according to the schedule.

The streets described in Part I are intended as principle means of approach to dwelling houses only and where shops or offices are permitted it is necessary to provide a wider road or better still a service road (as described in Part IJ) with limited access to the major road. The streets described in the schedule are not intended for through traffic but only for the traffic serving the buildings alongside. As a general rule the front main walls of buildings in *abadi* areas should be set back from the street boundary a distance of at least one-fourth the width of the street while the building line should be increased in the case of areas zoned for detached residences or for factories or business premises requiring the provision of loading space.

PART I.

Principle Means of Approach to Dwelling Houses.

Type.	Maximum Length in Feet.	Minimum Width in Feet.	Minimum Width of Carriageway.	Minimum Number & Widths of Footways.	Junctions with other streets.	Turning spaces.	REMARKS.
1	2	3	4	5	6	7	8
A.	...	40 ft.	20 ft.	Two of 7'—6" each.	The street shall communicate at each end with a street existing at the date of the coming into operation of this scheme or at one end with such a street and at the other end with a street of Type E, but in such a case the total length of the street together with the length of the street of Type E shall not exceed 1600 ft. The street may also communicate at both ends with a street of Type A or at one end with a street, of Type A and at the other end with a street of Type E if the total lengths do not exceed 1250 ft.	If the street exceeds 1000 ft. in length a turning space shall be provided at intervals of 1000 ft. at the most.	Turning spaces shall be of such dimension that a circle with a diameter of 30 ft. could be inscribed within the carriageway and the corner at any junctions of the carriageway turning space with the carriageway of the street shall be rounded off so as to be coincident with the arc of a circle tangential to the adjacent boundaries of the two carriageways and having a radius not less than 15 ft.

B.	2000 ft.	40 ft.	16 ft.	TWo of 7′—6″ each.	As for Type A, but the street may also communicate at both ends with a street of Type B. The street may also communicate at one end with a street of Type B and at the other end with a street of Type E if the total lengths do not exceed 900 ft.	If the street exceeds 1000 ft. in length a turning space shall be provided at intervals of 1000 ft. at the most.	Turning spaces shall be of such dimension that a circle with a diameter of 30 feet could be inscribed within the carriageway and the corners at any junctions of the carriageway turning space with the carriageway of the street shall be rounded off so as to be coincident with the arc of a circle tangential to the adjacent boundaries of the two carriageways and having a radius not less than 15 ft.
C.	1000 ft.	30 ft.	16 ft.	Two of 4′—6″ each.	Do	Do.	Do.
D.	450 ft.	21 ft.	16 ft.	...	The street shall communicate at one end either with (*a*) existing street (*b*) street of Type A or B and with no other street other than a street not intended for use as a carriageway.	A turning space shall be constructed at the other end of the street.	The turning space shall have a total area of not less than 202 sq. yds. including not less than 128 sq. yds. set aside for carriageway and shall be of a design approved by the Municipality.
E.	450 ft.	21 ft.	10 ft.	...	The street shall communicate at each end with a street of Type A, B or C or with a street existing at the date of the coming into operation of this scheme and shall communicate with no other street.	...	This street is only applicable where it is intended to give access to buildings arranged so as to front on open space. All the buildings to which the street gives access shall be on the same side of the street.

PART II.

Streets intended for use as a Service Road.

Type.	Maximum Length in feet.	Minimum Width in feet.	Minimum Width of Carriageway.	Minimum Number & Widths of Footways.	Junctions with other streets.	Turning spaces.	REMARKS.
1	2	3	4	5	6	7	8
F.	...	23′—6″	16 ft.	One of 5 ft.	The street shall communicate at each end with a street of dimensions not less than those prescribed for Type C in this Schedule or with a street existing at the date of the coming into operation of this scheme and shall communicate with no other street except (*i*) Streets not intended for use as carriageways. (*ii*) Streets with carriageways not less than 16 ft. connecting the service road, at such intervals as the Municipality may approve, with the street on which it abuts.	...	All the buildings to which the street gives access shall be on the same side of the street.

4. *Space between Front Main Walls of Buildings and Street Boundaries.* In the *abadi* areas of Lahore there is generally no such space, but the advantages of a building line are :—

(*i*) If it is ever necessary to widen the street there is space available which, although attached to the curtilage of the building is not actually built on and therefore, comparatively cheap to secure.

(*ii*) The interior of the building is insulated from the noise, dust and traffic of the road.

(*iii*) The arrangement is safer as occupants of buildings are further removed from the actual carriageway of the road.

(*iv*) The appearance of the building is improved.

(*v*) Safety from the traffic point of view is improved, particularly at bends and junctions ; and

(*vi*) There is less danger of encroachment on to the highway itself.

In the main streets of new *abadi* development schemes building lines set back behind the boundaries of the street or the projected streets are now frequently included in schemes particularly on the more important streets.

5. *Space about Buildings.* The existing Lahore Municipal Building Bye-laws lay down 75% as the maximum area of each site to be used for building but this provision does not apply in the case of a building facing two streets. There is no mention about the siting of this open space which generally forms an internal court-yard. However desirable this may be from some points of view it is of little use for through ventilation of the houses. Sites are now planned to provide for open space at the rear of the site in addition to the internal open court. The provisions now generally included in schemes in Lahore are, in this respect, as follows :—

(*i*) *Central areas.* A maximum of 2/3rd of site to be covered and 15 ft. space to be left at the rear

of each site clear of buildings.

(*ii*) *Abadi areas.* A maximum of 1/2 of the site to be covered by building with 15 ft. space at the rear and 5 ft. at one side.

(*iii*) *Bungalow areas.* A maximum of 1/4th of the site to be covered by main building and 1/8th by ancillary buildings with 35 ft. of space at the rear of the main building and a space varying from 30 ft. to 70 ft. at the front of the building.

Previously the Trust had in operation a proposal for grading the amount of open spaces at the rear according to the size of the plot. The main defect in this was that the provision actually encouraged smaller plots. The space at the rear is made applicable to all sites including those finishing a block of buildings and therefore usually having streets on two sides. By this means a through channel of ventilation is secured between cross streets whereas the previous Trust proposal referred to back-to-back sites only.

6. *Heights of Buildings.* Schemes now include provisions which as a general rule have the effect of limiting the ordinary residential building to 40 ft. above ground level, although for wider streets this is increased to 50 ft. In the case of streets like the Mall, Lahore, the Bye-law limit of 60 ft. is retained.

A sample of Town Planning Schemes already sanctioned will be available for inspection. These are too large to attempt to reproduce in this paper but examination of them will show how the above principles are now being operated.

A map drawn to 3″ scale will also be produced to show the suggested broad outlines for future land utilization in Lahore. Details of the proposals are being worked out to a scale of 40 ft. to an inch to form part of planning schemes prepared under Section 192 of the Municipal Act.

The main division of land uses proposed are :

(*i*) Widenings of existing roads.

(*ii*) Projected new roads.

(*iii*) General development zone which is being planned in detail to provide for

(*a*) Detached residence,

(*b*) *Abadi* development,

(*c*) Industrial and business zones of various types.

(*d*) Open spaces.

(*iv*) Industrial satellites sited at the north-east and north-west extremities of the Town.

(*v*) Rural zone around the periphery where sporadic building will be discouraged in view of the excessive expenditure of public money involved in the provision of the requisite services such as roads, sewers, and water supply.

(*vi*) Protected zone in which by reason of the situation and nature of the land development would be dangerous to health. This zone follows the low lying land adjoining the River Ravi.

Figure 6 shows these proposals diagrammatically to a scale of 1″ to a mile.

A problem closely associated with Town Planning and which is receiving attention is the control of Ribbon Development. The position in the Punjab appears to be, as it was in England until the passing of the Restriction of Ribbon Development Act, 1935, that the owner of land adjoining a public highway can claim as of right access to the highway. There was nothing seriously objectionable in this prior to the advent of motor traffic, but with increased road transport facilities this is resulting in the sprawling of towns lineal fashion along the road sides presenting to the planner and highway engineer an entirely new set of circumstances difficult to control.

The objections to Ribbon Development are briefly :—

(*i*) A large number of access points on to a road interferes with the safety of the highway since

such accesses debouch into highway slow-moving traffic and encourage standing and negotiating vehicles.

(*ii*) To accommodate the slower moving and standing traffic serving the development adjoining the road, a wider carriageway than would otherwise be necessary has to be provided and much of the public expenditure on the carriageway is rendered profitless since the effective width is reduced by stationary and slow-moving traffic.

(*iii*) The countryside adjoining the road is obstructed from view and ribbon development may fairly be said to be injurious to amenity especially when it is haphazard.

(*iv*) Grouped development is more economical in the provision of public services than ribbon development. The standard of construction of internal estate roads serving grouped development need not be as expensive as that of major traffic roads. The long lengths of sewers necessary for serving ribbon development become eventually of excessive depth.

(*v*) The development of social life in areas consisting of grouped and well-planned development is more satisfactory than is possible in lineal development.

The methods of land utilization adjoining major roads should be adjusted in consonance with the new conditions introduced by the growth of motor traffic so that improvements in mechanical traction may not be stultified. Where development must necessarily be housed alongside a major road a service road should be provided but the better arrangement is the internal access road accommodating grouped development away from the road.

The essential features of any legislation controlling ribbon development are (*i*) the restriction of the number of access points along major traffic routes and (*ii*) the restriction of building operations along the sides of the roads. Any scheme which merely controlled the latter would, I think, be defective. The Restriction of Ribbon

with open space which is wise town planning and is also a safety precaution. Large agglomerations of industry are undesirable on both grounds and such buildings should be insulated from residential areas by belts of open space while specially dangerous buildings used for the storage of inflammable materials should be isolated by providing open spaces around them.

On the assumption that there is a 40% chance that any one within 50 ft. of an exploding 500 lb. bomb would be killed, 130 persons might be expected to perish as the result of the fall of one ton of bombs in a congested area like the old city of Lahore while the relative effect in the bungalow parts of the Civil Station would be about 1/20th. Evacuation, especially of school-children, is taking place in the cities of many western countries but if industry and the resultant populations had been scientifically located in the first place into satellite towns passive air defence to-day would have been appreciably simplified.

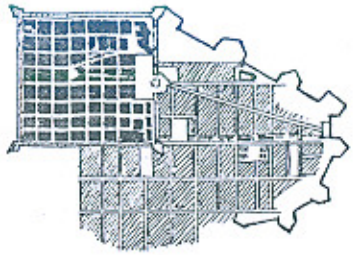
Development Act, 1935, in England makes illegal the erection of any building within 220 ft. of the middle of classified roads without the consent of the Highway Authority. The construction of any access into a classified road without the like consent is also an offence under the Act. Applications to do either of these things are made to the Highway Authority who may approve the application, reject the application stating the reasons for rejection, or approve the application subject to conditions. Where an application is rejected or approved subject to conditions, compensation may be claimed but rarely is as the person claiming compensation has to prove the demand for the type of development which he is proposing and in any case the compensation if paid is based on the status of the land at the day when the Act came into operation. This means that a single plot holder who acquired his land subsequent to the coming into operation of the Act cannot claim compensation on the basis that the plot is sterilized by virtue of the restrictions imposed by the Highway Authority, but only on the basis that the plot was part of a larger area on the date when the Act came into operation.

Whilst it may be possible to control ribbon development in the Punjab by virtue of a town planning scheme prepared under Section 192 of the Municipal Act in so far as that Section provides for the inclusion in schemes of provisions restricting the erection of buildings, it is suggested that the subject of the control of ribbon building is sufficiently important to warrant treatment in a separate Act.

It will not be amiss to refer in conclusion to the close parallel which obtains between many of the ideas of town planning and of air raid precautions. The fundamental principle governing both is dispersion of population. Town planning aims at the setting down of comparatively small planned communities rather than the straggling of ribbon building along existing roads and it may borne in mind that a road lined with buildings leading to a town offers a well defined direction to attacking aircraft. Multi-storeyed buildings are considered undesirable on planning, sociological and air raid precaution grounds. Development should be interspersed

FIG. 1

TURIN (ITALY)



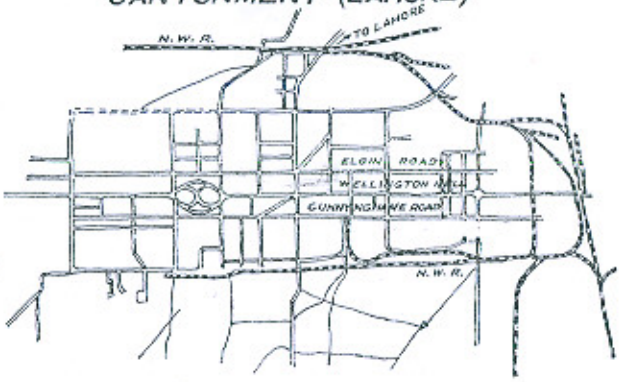
a

MUZANG (LAHORE)



b

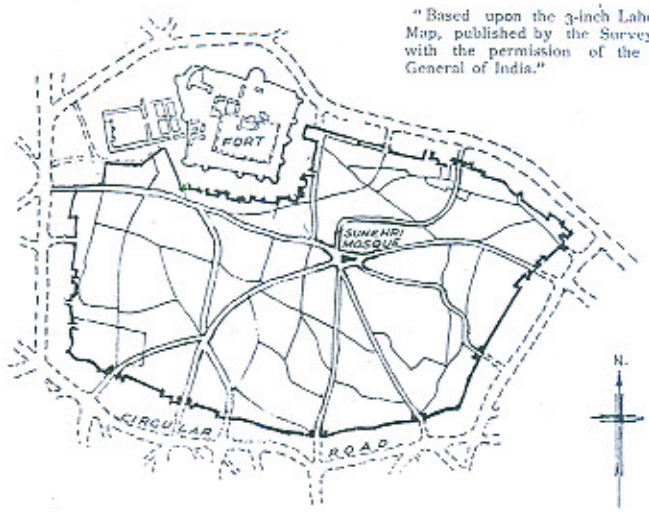
CANTONMENT (LAHORE)



c

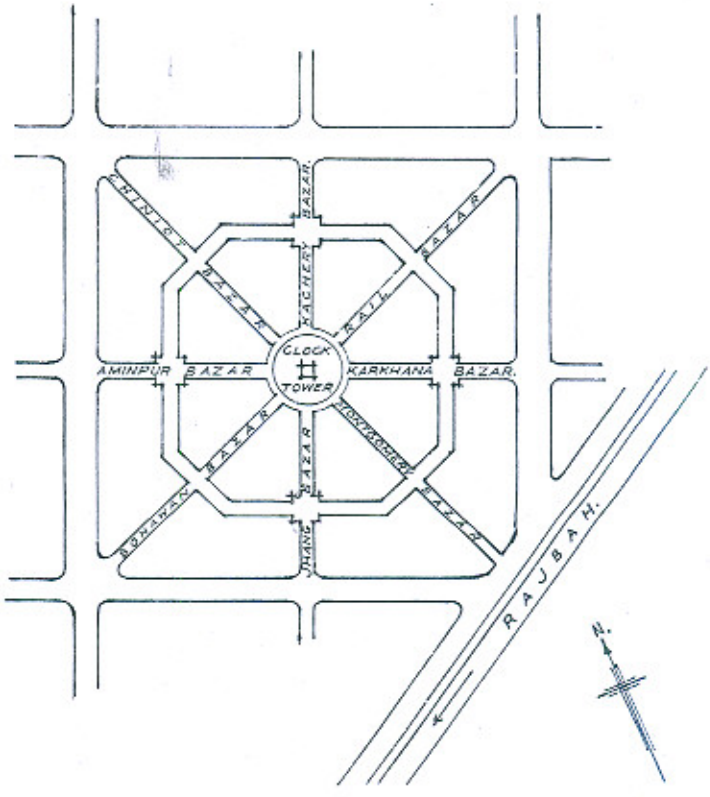
THE GRID IRON OR CHESS BOARD PLAN.

FIG. 2



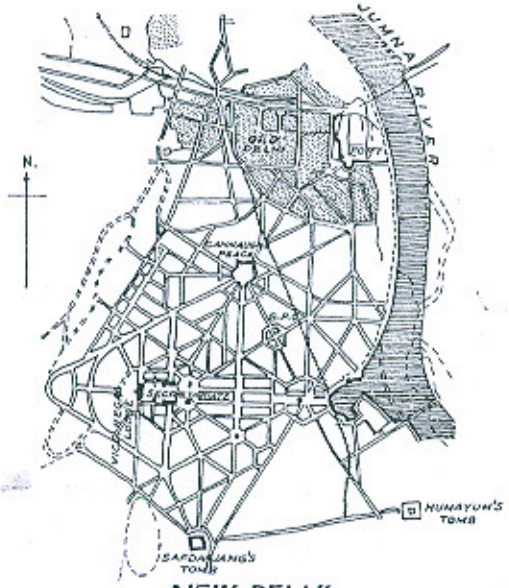
OLD CITY OF LAHORE.

FIG. 3



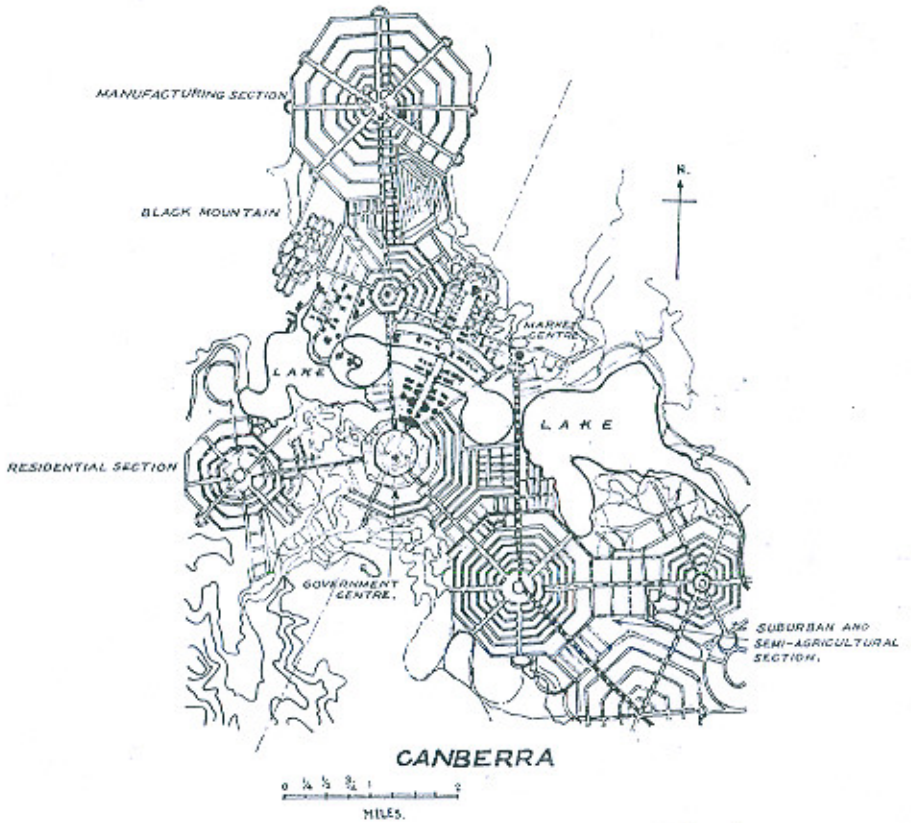
GOL BAZAR (LYALLPUR)

FIG. 5



NEW DELHI

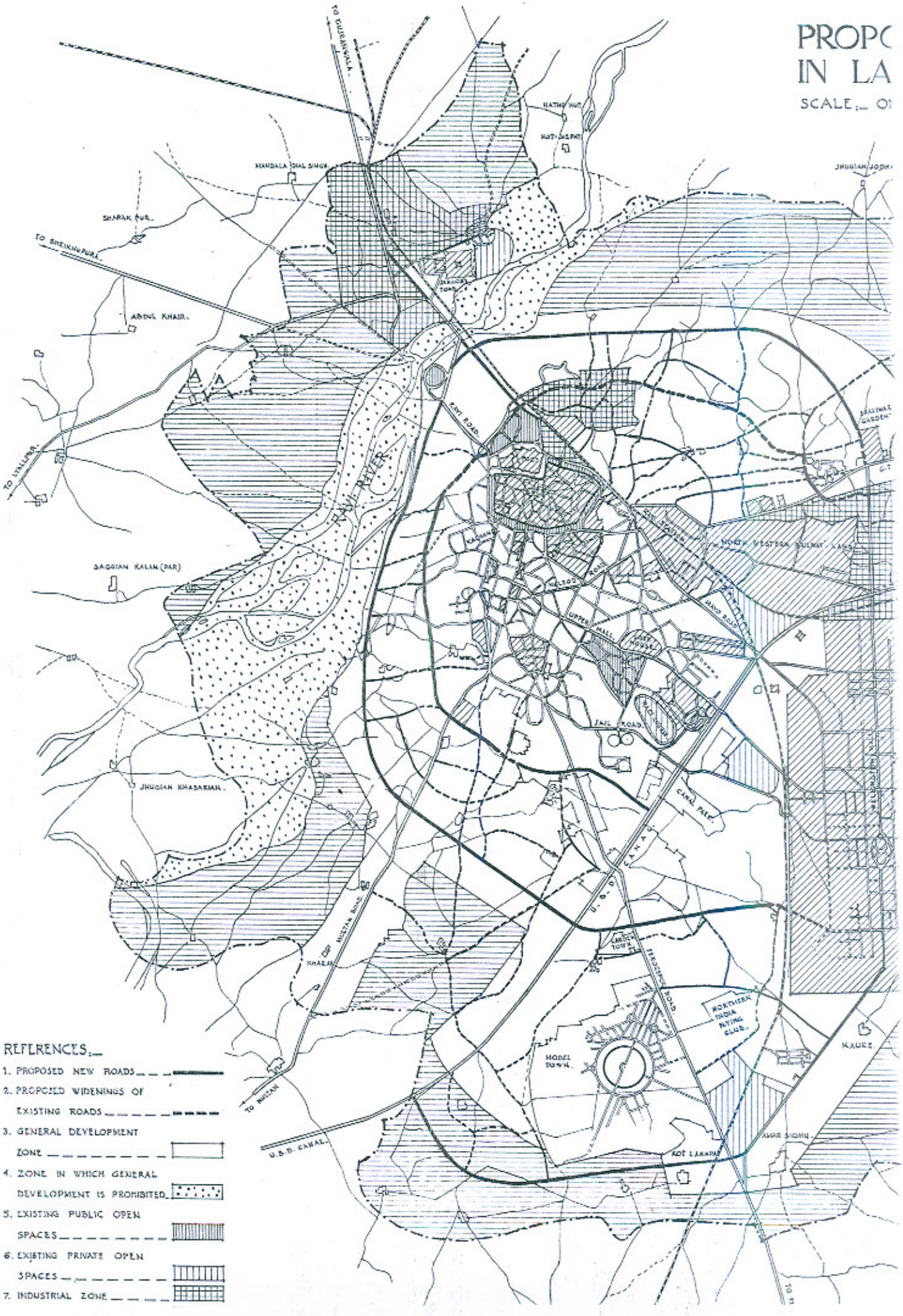
FIG. 4



CANBERRA

PROPO
IN LA

SCALE :— O


TO GUJRANWALA
MANDALA DHAL SINGH
SHARAK PUR
TO SHEIKHUPURA
ABDUL KHAIR
TO LYALLPUR
RAVI RIVER
SAGGIAN KALAN (PAR)
JHUGIAN KHASARIAN
KHAZAN
TO BEDIAN
U.B.D. CANAL
KOT LAKHPAT
MODEL TOWN
NORTHERN INDIA FLYING CLUB
KAHNA
JAIL ROAD
CANAL PARK
UPPER MALL
LAKE HOUSE
KING EDWARD
LAWRENCE GARDEN
MAIN BOULEVARD
KAHNA
KAHNA
KAHNA

IN LAHORE

SCALE:— ONE INCH TO A MILE.



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1940

DISCUSSION.

The **Author** introducing his Paper remarked that the form taken by town-planning in the Punjab had so far been of a regulative nature, *i.e.*, schemes had been prepared which controlled development initiated by the owners affected. This in itself did not offer any immediated positive inducement towards the remodelling of towns and the full effect of this work would only be visible in years to come. One had only to examine the new unplanned *abadies* in Lahore to realize how important it was to lay down a scheme before development took place. Once established, street lines tend to be regarded as sacrosanct. Although the adjoining houses may, in the course of time, be demolished, fall down or be replaced, streets were more likely to exist for all time. The Lahore Improvement Trust, however, was in the process of acquiring some 250 acres of land for the purpose of encouraging decentralization from the inside of the town and it was expected that these schemes will be profit making to an extent which would enable improvement of the existing town. It was, however, possible in cases where values have already deteriorated considerably to buy up decayed areas and actually show a profit in their re-development.

In England two simultaneous processes had been taking place since about 1920. The problem of slum clearance had there been tackled not only as a measure of condemning and abolishing existing slums, but also the building of good new houses. This had involved the building of houses and hiring them out at uneconomic rents within the means of the tenants and subsidised by local rates and central funds. People from the slums had found accommodation in these new houses and the owners of the slums were obliged by law to demolish their buildings at their own expense. Most of these slum houses were erected prior to the English Public Health Act of 1875. Considerable profits had already, therefore, been made out of them. The agitation on the part of slum property owners was not, therefore, as vigorous as might

be imagined and the owners were of course, left with their vacant areas on which they could redevelop in accordance with any town-planning scheme or bye-laws in operation. The Author stated his opinion that there could be no comprehensive acquiring of slums and re-housing of slum populations until some such principle was adopted in this Country, *i.e.*, until it was made illegal to sell or lease out a slum dwelling.

R. B. Bawa Nath Singh congratulated the Author on producing a very interesting Paper on a most useful subject which was at present agitating the public mind. He was also indebted to him for another reason in that he along with Mr. Holman had saved the Congress from getting 'waterlogged.'

While there could be no question about the principles of Town-Planning enunciated in the Paper, it was in the application of these principles that judiciousness was sometime sacrificed to rigidity and false notions of prestige. Living in Lahore as a tax-payer of the Municipality and having nothing better to do, he had been closely following that application, and also hearing the views of the public generally about the suffering to which they had been subjected. He was glad that the Author, who may be said to be partly responsible for this suffering, had thought it fit to explain the principles on which the various harsh regulations had been recently introduced.

On page 228, the Author had made mention of the functions of the Lahore Improvement Trust, what it had done so far and what it was proposing to do. The Trust was stated to have been constituted in 1936, *i.e.*, 4 years back. As far as can be seen from the Paper, it had done nothing so far beyond advising the Municipality in regard to Building Plans and Schemes submitted by the public. No work of positive improvement had been attempted. The original town of Lahore was admittedly one of the most congested and dirtiest towns in India ; while its recent expansion in the outskirts had been without any scheme or design. Not only had there been negligence in controlling this expansion, but no sanitary arrangements

had been made in the new *Abadies*, though the Municipality had had no compunction in collecting its taxes from the inhabitants of these *Abadies*. The result was that these newly built areas were as bad as the old town. We had heard a lot about the slums in London, and the miserable condition of the poor people living in these slums. When in London, about 6 years back he asked an English friend to show him round some of these areas. What he saw greatly surprised him as these slums were in his opinion, far superior to the Indian Town of Lahore. The streets were wide and clean, the houses had got flush system and fairly good light and air. There were streets in Lahore which never saw the sun at any hour of the day, and there were houses which had practically no light or ventilation nor any place on the roof for sleeping in the hot weather. Cooking, living, sleeping in health and disease were done in the same room. The life of the people was a misery and a burden. It was the improvement of these areas which the Trust should have tackled. Passing a few building plans or developing new unbuilt areas for the well-to-do section of the people on modern lines, cannot be a source of much consolation to the public. It is for this reason that there was generally dissatisfaction with the work of the Improvement Trust, and this dissatisfaction had been recently voiced a good deal both in the Press and the platform. During his recent visit to Calcutta, he took the opportunity of studying in a general way the work that was being done by the Improvement Trust there, and he must say that he had great admiration for what they had done. Both in the matter of development of new areas, which previously consisted of insanitary swamps and the opening up of congested areas in the old town they had done marvellous work, and without any additional burden to the taxpayer. All their schemes had been self-supporting if not profitable, including the cost of establishment and officers. A noteworthy feature of the Trust working was the observance of strict business principles in their dealings with the public and scrupulous regard for the convenience of the public. The authoritarian attitude so manifested in some places in the spheres where the

authority is derived from Government, was totally absent. The improvement was affected by persuasion and conviction rather than by coercion in total disregard of the views and convenience of the public. He wished some of these methods were adopted in dealing with the improvements in Lahore. If this was done, he could foresee no difficulty even in changing the face of Lahore, which the Author thinks to be impossible.

On page 232, the Author had mentioned that the minimum size for plots in the case of Indian *Abadies* had been fixed by him at 7 marlas. The public had a strong grievance against this provision, which deprived the poor people from owning a house of their own. Under the original bye-laws of the Municipality, this minimum was two marlas. It was increased to five marlas by the predecessor of the present Town Planner, and it has now been increased to 7 marlas. These constant increases tended to cause good deal of harassment to the public, as the plots purchased under the old regulation had been rendered useless. His suggestion to the Author is that this sort of restriction should only be imposed in the case of new schemes, and not in the case of isolated plots, which are incapable of being increased to the new minimum.

In the case of the bungalow type houses, the fixing of the minimum at such a high figure as fifteen kanals was opposed to all principles of economics and democracy. Under the Author's zoning system, it is proposed to reserve certain areas like the Kenya high lands for the princes and aristocrats, while the average middle class people were to be relegated to inferior localities. The proposal was not only repugnant to the modern sense of a democratic society, but was quite unworkable in practice. Small plots of isolated land, scattered all over the town purchased on the basis of the old regulation, were owned by numerous individuals, and it was quite impossible for them to increase their holdings to the new minimum. This sort of zoning was only possible where a new town was to be built, and the entire land belonged to Govern-

ment or local body, such as in New Delhi. The system of fixing minimum size for plots did not appear to have been observed in any other town in India, and was proving very irksome in Lahore. Even in Delhi, the large plots originally designed were allowed to be split up on certain further payment, because people had found it impossible to maintain large compounds, or to pay for new plots owing to rise in prices of land. Again the large areas like fifteen kanals were not at all economical on business principles. The minimum price of land on roads where fifteen kanals was now sought to be prescribed, was Rs. 3,000 per kanal, so that the cost of land alone was Rs. 45,000. Add to this the cost of building say Rs. 40,000. The cost of a house would thus be Rs. 85,000. In order to give a return of say 4%, the rent of the house should be at least Rs. 400 allowing for house tax, repairs and vacancies. As far as he knew there was not a single person in Lahore, even among the rich who would be able to pay this high rent. It had been contended that by fixing this high minimum the prices of the land will automatically fall. This was an entirely vain hope, as no one would be found willing to sell his land at a loss. All that the fixing of such a minimum would achieve would be the continuance of suspension of the building operations which had now been in existence for the last three or four years, *i.e.*, ever since the new regulation was introduced. It was not understood why the fixation of any minimum at all was necessary, so long as you observed the regulation that only one-fourth of the area should be covered by the actual building. This was the rule in other towns in India. If, however, a new heaven was sought to be created in Lahore, the minimum should nowhere be more than four kanals, so that even a man of average means may have a chance of breathing fresh air, while the rich can provide as large compounds as they liked. The average income of an Indian was Rs. 5 per month, and it was preposterous to cater for the aristocrats in this country. Could the Author show him a similar regulation in London? While there was much and necessary stress on the width of internal streets, nothing was said in the Paper regarding the inadequacy of width of some of the existing main roads, belong-

ing to the Municipality. The narrowness of these roads constituted the chief reason for the congestion, and it is essential that steps should be taken to widen these roads. The cost of such widening was a legitimate charge on the revenue of the Municipality, but as stated on page 233, this burden was sought to be thrown on the prospective house owners by requiring them to set back the new houses by one-fourth of the width of the streets. This was a source of great discontent among the public. The streets required to be wider not only at those sites, where new houses were to be built, but everywhere else, where the houses had already been built.

On page 237 the Author made mention of the new regulation for space about buildings. This has been increased from one-fourth under the old bye-laws to one-third in the case of new *abadies*. No reasons had been given for these increases, and for the differentiation between central areas and new *abadies*. The one-third space rule was universal in other town in India, and he could find no reason for having a different rule here. The one-half rule had caused a great deal of dissatisfaction

He had made the above suggestions solely with the view of removing some of the hardships to which the public had been subjected. He hoped the Author would give serious consideration to them. The people here were not entirely devoid of public spirit and they knew in what direction their good lies.

He again congratulated the Author on producing a most interesting Paper, and the interest taken by him in the improvement of Lahore.

D. B. Amar Nath Nanda offered his congratulations to the Author on his having contributed this Paper to the Punjab Engineering Congress. Further he welcomed this Paper as affording us an insight into the ideas and notions, standards and practices, which the Author would bring to bear upon the gigantic task of building up the Lahore of the future. Personally it was a matter for great satisfaction to him to note that he found himself in

agreement with the majority of the observations made and opinions expressed by the Author in his Paper.

As the time available was short he would make an attempt to touch upon only a few salient points of the Paper. First and foremost the Author had made a mention of the back-to-back types of houses, which were in great vogue in the new *Abadies* of Lahore as well as in the other large towns in the Province, where expansions were taking place rapidly. These, he stated, had been declared illegal in England since the Public Health Act of 1875.

Now as a member of the Lahore Improvement Trust from 1936-1939, he had been fighting almost single-handed against this illegal—nay insanitary type of house planning. Instead of help forthcoming from the previous Government Town Planner a stubborn opposition wus put up when the suggestion for the introduction of a back lane to serve as a service lane was put forward on the analogy of what had been done with great advantage in New Delhi, Karachi, etc. The Author holding as he did such rational and up-to-date ideas on this and kindred questions gave promise of his proving a great Messiah to us in his great work of town-planning in the Punjab.

The Author had further on mentioned about the Lahore Improvement Trust had instituted a panel of persons qualified to prepare town-planning schemes. This provision according to certain limiting clauses of the Municipal Act being persuasive in character instead of being mandatory was not very useful. He quite agreed with the Author that a system of registration with minimum qualifications for Architects and Engineers should be enacted. As regards the activities of the Lahore Improvement Trust it was still to be seen when a model area was developed by it to serve as an example of an eye-opener to the citizens of Lahore, which would not only disarm public opposition, but would captivate the people imagination and good will.

The Author has stated that there was no scheme in the Punjab comparable with slum clearance and re-hous-

ing activities in Europe. Well, there was a definite provision in the Improvement Trust Act making it incumbent on the Trust to initiate and carry out slum clearance and re-housing schemes and no one could deny that in Lahore there is a vast scope for this kind of reform.

Lala Ishar Dass said, "One who pays the piper calls for the tune is a good old adage, and if this had been applied in the Zonal Scheme of Mr. Coates there would not have been an uproar in protest all around.

About fifteen years ago I was on a trip of sight seeing and while in Rome I went to see the old house of Columbus. Near it an already big street of 60 or 70 feet with palatial buildings on either side was being widened to about double of its existing size. At the very sight it shocked me to see those huge buildings being razed to the ground by heavy machinery, so I decided to enquire as to what necessitated all that. In a talk with the Engineer-in-charge through an interpretter I was told *inter alia* the following keynote of their efforts.

"More light, more air and better accessibility." This again needs application in the first instance where it is most needed.

I suggest that Mr. Coates will do well to apply this principle in the most thickly populated areas first. No one will have objections to Mr. Coates's schemes if the costs of the amenities provided for in a particular zone are paid for by the residents of that very area. Chief grouse against his schemes seems to be that Peter is being robbed to pay Paul."

The Author in reply to the discussion, thanked those who had taken part in it.

Referring to the statement of R. B. Bawa Natha Singh that the Trust had done no positive improvement, he agreed that this was correct and explained that until only recently it had no funds for the purpose and what funds it had now, were granted to it as a loan by Government requiring repayment of capital and interest. He

pointed out that it was, therefore, clear that in these circumstances, interference with the improvement of the existing town depended to a large extent on the financial success of its development schemes to be embarked upon outside the town.

Referring to the question of the new *Abadies*, the Author admitted that a mistake had been made in not having regulative plans to follow and in allowing these *Abadies* to grow up in the form considered best by the owners concerned. He pointed out, however, that this was generally recognised which explained why Government had inaugurated the Trust and appointed a Town-Planner. Development to-day was controlled by town-planning and building schemes. Neither the Trust nor its officers could accept responsibility for what happened before they were in existence. It was, however, to be expected that proposals to prevent a repetition of this defective *Adabi* development would be opposed by those who thought their financial interests adversely affected but more people including a few developers themselves were accepting and supporting the new ideas. He agreed that to be successful, town-planning activities should have wide public backing.

The proposer's reference to the provision of the minimum size plot of 7 *marlas* and his suggestion that it should not be imposed in the case of isolated plots was a principle which had already been worked upon. The Author stated that applications for building on plots less than this minimum were invariably sanctioned where the site was incapable of extension owing to its being surrounded by existing buildings and had been separated before the regulation came into operation.

The proposer's reference to the 15 *kanal* minimum required some elucidation. This minimum only affected small areas of land where the existing compounds were already larger than this and only a few vacant plots remain. The bulk of the land zoned for detached residences was proposed to be restricted to 4, 6 and 9 *kanals*. The Author stated that he was satisfied, and so were

other authorities who had examined the case, that there was actually a demand existing for detached residences and the effect of the zoning proposals were merely to direct that demand to the proper place. He also pointed out that he could not accept the proposer's argument that because the value of land was high in a particular locality, the zoning should be adjusted accordingly. He stated that it should be borne in mind that these values had arisen as a result of free speculation without any attempt at town-planning control. To produce a plan based on these values would, in fact, merely be repeating and continuing the unplanned state out of which these values had arisen. Planning should come first and price afterwards.

The Author stated that there was no justification for the proposer's statement about the suspension of building operations. There was no statistical support for this at all.

Referring to the remarks of D. B. Amar Nath Nanda the Author stated that he was glad that the Dewan Bahadur agreed with his notions on the subject of back-to-back sites. He said that coming from a Retired Superintending Engineer of the Public Health Department, this was reassuring as the particular provision which required space at the rear of houses had been vigorously assailed on social as well as technical grounds.