

UNIVERSITY OF NSW

HARRY SEIDLER UNSW TALK 4

FORM RELATIONS IN BAROQUE AND MODERN

ARCHITECTURE – PART 2

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INTRODUCTION

[0.00] **Sydney architect, Harry Seidler, was appointed visiting professor in architecture at the University of New South Wales for the first semester of 1980. He was born in Vienna in 1923. After studies in England he graduated from the University of Manitoba in Canada. Later, he did post graduate work at Harvard University under the founder of the Bauhaus, Walter Gropius, and studied design under the painter, Josef Albers. In 1948 Seidler started to practice in Sydney and the many buildings he has completed since then have earned him an international reputation. Amongst his best known buildings is Sydney's Blues Point Tower, Australia Square and the MLC Centre and Canberra's Trade Group offices. A recent overseas work is the Australian Embassy in Paris. This lecture is the second of two lectures which deal with baroque architecture and the parallels and form relations that exist between baroque and modern architecture.**

During the first of these talks on the baroque and its form relations with the tendencies in modern architecture I *stressed* the drive toward innovation in both periods. The baroque was a time of great creativeness and invention, especially in the systematised spatial geometry that has its parallels in our own technological innovations, the materials and the system, geometry, which is born out of these which are our considerations. Now, so far I've dealt with largely orthogonal or two-dimensional manifestations in both eras. We talked and saw the geometries of the quadrant which occurs in both periods, the oppositional forms and symmetrical curves that occur at much in the seventeenth century as they do in the work of some modern architects and modern painters. Lastly, I pointed out that the intuitive and really the beginnings of rational investigations of structures produced some interlocking rib forms in the baroque which have their parallels not only with our own structures of that kind but they have become really the hallmark of *much* of the work of well-known modern architects as well as modern structural engineers such as Nervi.

Now, today I would like to expand this particular theme into more complex manifestations of three dimensional structures which occur in the two eras and which are quite fascinatingly parallel. Now, these devices were first employed by Borromini in Rome and they were later taken up and expanded by a man who learnt a great deal from him and who was influenced by him and that's the German Balthasar Neumann in Germany. Now, I believe that historians have not dealt with this subject adequately. I believe too little is known and has been investigated about the first use of reinforced masonry, almost a kind of reinforced concrete which was employed at the time.

Now, here we have a building that is in the same complex in which we saw some more or less two dimensional interlocking ribs. It is the College of Propaganda Fide in Rome built by Borromini in the middle of the seventeenth century. Now, what is unique in this, I believe, are the *arch* forms. Not only is the building devoid of any corner support, this is a hall used by the abbot, more or less rectangular space but it has no corner support for its circular, almost like a keystone vault which is supported by these four corner arches and in fact more, really, taking in the longitudinal ones as well. But what is remarkable about these arches is the way they turn their faces from a almost horizontal surface here through space through a complex geometry into a vertical face naturally leading down into the support. Similarly, here you find one

that is orthogonal to the plan shape and twists through space to become horizontal in order to offer the greatest support to this central elliptical form which forms the ceiling itself.

Now, this way of dealing with three dimensional forms to resist stresses in structures is unique in the history of architecture and it was brought to really quite remarkable proportions in this church by Balthasar Neumann built in the early eighteenth century about 1730 or so it was designed. And it is a church that just defies all rules until then in force in the way of classical good behaviour one might say in design because it employs not only new structural means but also entirely different kind of spatial concepts and geometries in the way the plan form is arranged. What happens in the plan is that its external surface is essentially orthogonal; it's quite a simple, apparently rectangular form of the main nave but internally it consists of elliptical vaults which interlock and lean against each other and especially at the crossing or as in German they call the "vierhunc", the meeting of the four, of these four main domelike shapes. And what happens at their intersection is as remarkable as the earlier attempts of Borromini to come to grips with this problem because what Neumann does is that he takes the lines of these stress lines of the vaults and meets them in a unique way. The church is in the middle of the countryside in northeastern Germany. The exterior is not as prepossessing as all that; I don't believe it's as remarkable as the things that happened on its interior. It has two high towers and its external architecture is fairly typical of northern German baroque but on the inside is where the remarkable things happen. Here we see the beginning of the main vierhunc, the meeting of these vault forms in the centre and what we really have are four variously shaped spherical and ellipsoid vaults meeting with the binding arches formed into warped planes. Now, what is *amazing* in this building is that in 1835, almost a hundred years after it was built, one of these external towers was hit by lightning and the fire spread right through the timber roof structure above these masonry vaults. It made it burn out completely and the roof collapsed onto these walls, causing absolutely no damage at all to the structures, in fact including the frescos which remain intact to this day although they have been over-painted in the early part of the twentieth century. Now, that is quite astonishing because normally masonry structure subjected to such intense heat as would have been caused by such a fire would have collapsed, whereas here there is some suspicion and some indication that Balthasar Neumann knew about the advantages of reinforcing masonry with steel or with cast iron at the time because it's suspected these vaults are a form of reinforced masonry and in fact an early form of reinforced concrete. Balthasar Neumann by training was an army engineer.

[10.36] Now, this church is one of the high points not only of German baroque but I think of architecture of the western world. It *defies* the perspective lines expected of classical architecture in that first of all the altar is placed at the very centre of the main nave rather than at the intersection of the Latin cross as is usual, of course, in classical architecture until that time. But the most remarkable point of all is this intersecting of quite diverse ellipsoid and spherical surfaces with the held of these arches that simply twist through space and very naturally and very logically are shaped and proportioned so as to most directly dispose of the loads imposed on them downward.

There can be no doubt that modern structural engineers such as Nervi employed very similar techniques in our own time because in this support for the cathedral in San Francisco, a reinforced concrete structure carrying vast hyperboloid intersecting vault

forms above, the stresses and strains come down into the support and are resolved by a similar technique of twisting the receiving of the load into the abutment of the foundation by resorting to the same kind of warped planes as the baroque used.

In another church by Balthasar Neumann, which is really the palace chapel in Wurzburg, another comparable way of even more complex forms is of spheroid roof forms intersecting with binding arches of a similar nature. Here's a detail of those. And to describe and fully appreciate the geometry it would be quite a task; it is utterly complex and gives evidence of the remarkable command over spatial geometry and calculus that was held at that time but especially by people of this kind.

And again in modern architecture here is a column that undergoes a turn as it rises, a column support for a very tall building, MLC in Sydney, and it is the same kind of reason for it turning an element from orthogonal plane of the plan to an outward turning form at its support. And this building for Hong Kong which has to resist great wind loads, a high-rise building, the same kind of twisting surface of an undulating cross-section and plan can be seen in that it's S-shaped here, moving away and having a lesser moment of inertia than at the base where that same S-shaped form moves outward, outward to inward, a very dramatised and obviously logical way of resisting such stresses.

Breuer, an architect who has used these techniques consciously or otherwise in this church in Muskegon twisted the whole side of the church in order to give quite a thin-walled, large volume incredible strength and stiffness without resorting to the conventional frame structure of any kind; it's the actual surface become immensely rigid by transforming a trapezoidal roof form at the top into a rectangular base and these are tendencies, I think, that are undoubtedly parallel. They may be more analytic in our age but I would give a lot of the benefit of the doubt to baroque architects and not underestimate the amount that they understood about the way stresses in structures behave.

Here is another form of this same tendency in the Australian Embassy in Paris of picking up a curved load from a façade of an eight storey building above it and transposing that load by means of hyperboloid surfaces into wind resisting base abutments and undergoing the same kind of twisting geometry to achieve that end.

Now, we have talked about freeform parallels that exist in the baroque as well as our own time and I think a starting point might well be, as so often is the case in the baroque, with its main figure and that's Borromini. Here in the Church of **San Carlo [alle] Quattro Fontane** there is that same freeform pulsation of forms that move inward and outward, the curve and its counter-curve experienced in the façade and in these front steps. Now, these forms have been used by architects throughout the baroque period with an increasing frequency as time went on. Here is the German baroque Hildebrandt in the Belvedere in Vienna having again these opposing curved forms of quite an irregular nature. And in the Zwinger Palace in Dresden which has been rebuilt after its demolition during WWII the same forms occur again. In a very beautiful building outside of Bath in England, the Prior Park, shows up a staircase that recalls these same elements in a three dimensional way, not only the structurally twisting forms but this pulsating curve against counter-curve. And when one sees this stair in both ways, moving up and moving down, it is really an element in motion as

much as one can draw the parallel undoubtedly to the work of Corbusier where his forms in the proposal for Algiers of the early 1930s and by such forms that are undoubtedly very, very similar in content.

The one man who has probably excelled more than most modern architects in the use of curved form, Oscar Niemeyer in Brazil, in his design for the bourse, for the Stock Exchange in Rio de Janeiro, its large hall employs a similar geometry. You can see the form here of again the S-shape, both its positive and its negative in the cross-section of the building undoubtedly employing that kind of geometry which when one compares that with Dientzenhofer's church in Prague, St Nicholas, quite magnificent curved linearity in the back of the organ loft as well as in the mezzanine, role generally that are employed in that building.

Although one may often say that such undulating forms have been used in a decorative way, both in the baroque and in our time, and in our time it's not only the Corbusier/Niemeyer that use them. One can find such shapes appearing in many modern architects' work such as Hejduk, Sterling, Isozaki in Japan and Gwathmey Siegel in New York and Richard Meier, they have all employed these forms but essentially in a decorative way. To my mind, these forms if used and if found to have some validity in our time visually they gain so much more by becoming - and they're immeasurably increased in value if at the same time and simultaneously as being chosen for their visual worth they are also based on some geometric cum structural system, that is both the geometry and a structural system that is based on some kind of system.

[20.35] And this, I suspect, here is a scheme for Tuggeranong near Canberra of office wings that are woven in and out and interact with each other, pulsating back and forth and the system, geometry for these forms is as much existent in the baroque as it was today. In other words, if there is a basis for these forms not only being used decoratively here in Bath, the famous Crescent and the Circle and just off the slide I think is a wave line of Lansdowne Crescent which are the three most important spots in Bath. Now, they find they are parallel in these buildings that *use* such forms but as one would *think* they are based on just a decorative theme but not so either in the baroque nor in the modern architects that have used this or as I feel they should use such elements because here in Bath we find that these forms are really subject to quite a clear system geometry in that every one of these elements which make up one of the units, of course, as much in the Circle as it does in the Crescent and in the others, they are all identical elements assembled next to each other. And this assembly of components that lead to such geometry raises this kind of geometry to a level that is far above the decorative.

Here we have the essence of this scheme in Tuggeranong that employs long span flow elements that are straight, that are tapered and therefore start to go around the corner, creating a curve, or used the other way around and it makes the curve simply go back. It does follow that the geometry of such compositions will have some essential discipline about them and nevertheless with skill this discipline can be exploited to be as flamboyant and as decorative as one can imagine. And what can be more beautiful, really, in the thing that is handed down to us from Bath and the Royal Crescent? A superb, vast, open sweep of this elliptical form made of quite regular components,

maintained collectively so as to be in as good a shape physically, really, today as it was in the early eighteenth century.

Now, in Lansdowne Crescent these single curvatures alternate with their opposing curves, making this very lovely oblique curve against counter-curve composition which is not unlike the theme used in this scheme of offices. Lansdowne Crescent, and here we see it the other way, waving along. The contours, of course, which gives it this great validity, really, in that it is buildings that essentially hug the contours although they slightly go across them as well; you can see the stepping of the units here taking place due to the slight incline here but then they straighten out and go along so they cope with being fitted into nature in the most natural of ways.

Now, the components that make up this kind of geometry in the baroque was very often of a quite deliberate nature and here we have this kind of key form, this S-shape employed in the garden architecture of so much of particularly French work. And this could be clearly counterpointed to Corbusier's – here we see it – in plan view work in Algiers. These elements have a key behind them, have a similarity of geometry and form although they appear quite free, as much as in this playground of a very simple block of flats built for the Housing Commission here in Sydney which also employs a fragment of what appears to be an elliptical shape here placed at random, opposing and interlocking with each other to form a children's maze. All the forms used are the same or at least they follow from the same special geometry but the elements are simply juxtaposed to form the total spatial theme desired as in this block of housing for Singapore where the components are in fact parts of circles. But because of the way they are arranged in the convex and concave form they appear to be quite a free-flowing set of buildings interrupted by spaces between the different segments but in fact if these segments were taken and assembled in another way they would in fact form a circle, a total enclosed circle. But by being turned around they offer, of course, the variety of outlook for these housing units to make the most of the particular hillside in Singapore.

Fischer von Erlach, a famous baroque architect in Vienna in the eighteenth century and end of the seventeenth century built this Schwazenburg Palais and that has a most sweeping and elegant approach ramp leading into this portico. And who could argue or deny the fact that this American architect, well-known architect, Paul Rudolph, wasn't in some way influenced by that kind of design and architecture in giving a stepped ramp approach to a building outside New York, a very, very similar configuration.

Zwinger we have mentioned before in Dresden, one of the late baroque buildings of quite astounding proportions and geometry, quite almost *indescribable* in its *complexity*. How this was ever reconstructed remains one of the magic questions, really, of modern history; it's quite unbelievable that they were able to rebuild this palace out of the small fragments into which it must have been blown by bombers in WWII. But nevertheless it is almost like new now and we see – difficult to convey in these photographs – not only this kind of pulsating geometry but also the spatial play that goes on vertically in the assembly of bringing these pavilions that make up the whole Zwinger Pavilion into an orchestration in three dimensions. Here we see one of the stairs and how that curvilinear geometry moves vertically up the stair and continues both in plan and in section to complete that kind of work. And there can be

no doubt that even in this design – not a successful one but a design for the new Parliament House in Canberra and its office wings adopts again this kind of pulsating geometry of a wing that bulges out in the centre and causes light and shadow to be played on its surfaces very similar to the buildings we have just seen. And here in fact the two concave surfaces, irregular but they're on mirror image in this instance, adding richness to the same them.

[29.41] Marcel Breuer, an architect who is usually known for very orthogonal, very strict geometry, he has often resorted to the use of such geometries to soften the theme of the rest of the building and he we can see quite an orthogonal arrangement of the confining walls of that which forms really the spatial pattern of a small structure. But the extensions of that space to the outside is retained by walls that take on these opposing and pulsating geometries. In this theatre it is difficult to deny that again the curves which are really used only here to screen a translucent or transparent ceiling which is needed for acoustic reasons, that the lines, the upward sweeping and downward sweeping curves of these confining surfaces is not also influenced in the same sort of way to the way we have seen in the baroque.

Now, to switch from this to the baroque in its quite different aspects, not so much the geometry employed in the buildings within but rather the buildings and the world outside them. And I think there is no better starting point than to see a plan of St Peter's in Rome, that famous art masterpiece, really, of Bernini, the sculptor and architect who did so much of his work in Rome. And we see the cathedral itself, St Peter's, which is well enough known here but the flanking wings of buildings leading up to the main entrance of the church they slope outward. And we have seen the trick employed by Michelangelo to achieve this defeat of perspective before in this capital and we see this reoccurring here but what really is now a new theme and a thing that happens in building is how a building extends outward and creates a negative building, a space enclosed by a building outward from the building itself and this large pincer-like shape of the great forecourt and piazza in front of St Peter's. It is the magnet that has attracted literally millions upon millions of tourists. This building, together with Versailles outside of Paris are the most visited buildings anywhere in the world; countless busloads by the day, by the hour, bring people to marvel at this superb spectacle of baroque architecture and the outdoor space that it suddenly has learned to create in the seventeenth century.

The preoccupation with what this kind of space can do, both horizontal in plan and in this case also vertically, is evidenced also in the Spanish Steps in Rome. Built in the early eighteenth century, these steps give access to a great level difference between two major parts of Rome. In this early lithograph we see the huge distance that a pedestrian has to traverse to get from one to the other but the way adopted to make this more palatable, less painful to climb all this way is by the route that the pedestrian is forced to take, this gyration of being forced to go up along a curve, then turn sideway, then back again and up again. In other words, it isn't just the most awful thing to have to climb a flight of stairs from there to there but your route is made quite delightful. And here's a point of pause, sometimes a sculpture or a fountain and then you go sideways and you curve around another and so on; it goes up and up like that until you reach the top and by the kind of almost theatrical theme that you're subjected to on the way I think the pain of having to climb up such a distance is quite reduced.

But probably no one other than the French really knew how to cope with external geometry, that is the spaces outside buildings, as they have done in some of their chateaus and buildings outside of Paris and in other parts of France for that matter. Now, the French have always had a characteristic love of drama and of the theatre and that has given the world some of the most stunning manmade scenery that literally took it upon itself to outdo nature at its own game.

In this aerial view of a park of Vaux-le-Vicomte what comes into focus is really the aristocracy in France's edicts such as can be only summarised by Louis XIV's famous saying, "L'état se moi", I am the state, and he proceeded to make this tangible with the help of men such as Le Notre, the famous garden architect, and his architect Le Vau, both of whom were employed in the construction of this chateau of Vaux-le-Vicomte. And one might think seeing it from the air that this is really a two dimensional pattern which would not really be as fully evident from the ground as it might be from the air but the skill of Le Notre, I think, comes to the fore in this, one of his first and really most remarkable achievement at Vaux-le-Vicomte is the fact that you do see these patterns by the way the landscape has been moulded, moulded in a vertical dimension. On high ground here, one looks toward the chateau but you are aware that you can in fact see this magnificent garden layout stretched out below you. Looking the other way it similarly is made quite evident as in this early lithograph of the fact that there's quite a substantial vertical dimension exists between water cascading down, forming this cross axis of a lake, and that it isn't only patternmaking in two dimensions but highly the same picture, really, in reality of these cascading fountains here, leading onto that cross line of water that cuts through the landscape.

The two architects, both the architect and the landscape architect employed in this building, of course have a very sad history to this building because Fouquet, the owner, who commissioned this work from these two men was treasurer of France and Louis XIV when he came to the housewarming party, which apparently was held for some six thousand people, he stomped around in fury and said "How dare this man", you know, "steal from the coffers of the state of France", as probably he must have done to afford such a thing but he quite viciously locked up the chateau the day after the opening, threw Fouquet into jail who was thereupon visited very loyally by his two architects; both Le Notre and Le Vau remained as his friends to their great patron. Of course, Louis XIV said "Now, you two fellows have done this for Fouquet but you're going to now work for me and you're going to do it bigger and you're going to do it better", the end result of which was of course Versailles. It is bigger but it is very much doubted by historians whether it's better.

But before we look at Versailles, let us just see the sequence of external spaces characteristic to the baroque and before we start looking at our own time and what it has done in this first instance of urban spaces the first one being at Nancy. Nancy in eastern France, the centre for another kingdom in the old days, has one large square, another rectangle, long urban space which then again through arches and openings opens onto a curvilinear, elliptical kind of space before finally one arrives at the palace. And this sequence of spaces as they occur in the focal point is what is so remarkable and so new, really, at that time in the way spatial concepts were employed to mould external space, not so much as buildings within.

[40.07] And Nancy's main Stanislav Square one can see here crossed by two parallel axes. We go through an archway, we're forced to go through quite a narrow opening, see another view into a long court planted and flanked by other buildings to then go through another set of openings which give upon this elliptical curvilinear space. In Paris itself the Place Vendome is a fine example again of the making of urban spaces that are as *exciting* and as really the things that make that city as well as many others more almost than the buildings that flank them; the buildings tend to be fairly bland and subservient to the main thing of producing such a magnificent urban setting as that square. The combination of those squares, no doubt, in Paris is of course Place de la Concorde, this gigantic space at the very foot of the Champs Elysees which leads up from its focal point, the famous obelisk to the left, and we can see the Madeleine, another focal point along this axis through the buildings that flank it on either side; an absolutely superb and stupendously huge endeavour and I think hard to ever compare to anything in our own time.

The activities of the aristocracy in France engaged in not only the building of chateaus but of urban spaces was of course aimed to be copied by almost all the aristocracy of Europe. And here in an early drawing of Chambron outside Vienna one can see the kind of uses these buildings were probably put to: that is enormous undertaking of entertainment, horse riding, of cavalry displays and whatever the entertainment might have been in those times that would tempt the aristocracy to while their time away. Here is Chambron and its axes and its layout as we see it today done by Fischer von Erlach.

Here, looking the other way again, relating the vertical dimension in the gardens, no doubt stimulated by Le Notre and also the silhouette of the building up on the hill there, the Gloriat on the opposite side to the palace, quite a magnificent axes. And here we see it from the side, the waterways crossing both axes of quite enormous proportions.

Prince Eugene of Vienna was compensated or paid for his troubles of being victorious and leading Austria's armies against the Turks by being donated this magnificent Belvedere Palace in Vienna which we can see at the top of this hill. And it leads downward in almost a continuous slope, interrupted by some cascades of waterfalls and palms and so on but leading, different to the French theme, almost entirely downward. But when we look down we see the reason why: because it simply uses the garden design as a foreground, almost a theatrical foreground to seeing the domes of the city churches in the background, the whole theme of the city, a most dramatic and theatrical disposition of a garden that one can possibly imagine.

I've mentioned that the French, of course, really pursued this aim endlessly in their countless chateaus. Here the chateau of Gorbras, also built for a general who I believe was victorious in various battles, the chateau at Chambs sur Man, quite enormous extensions into the landscape and here the rather latent, delightful chateau in the Loire called Cheverne. One of the best known architects of the baroque period, Mansard, after whom the particular shape of roof which we can see here is named, of course, built of course this maison la fete, also a chateau built on the outskirts of Paris with enormous axes of gardens and ponds and pools in which the building is reflected.

Now, one can only wonder has this got any validity to our time at all but let's first of all and finally look at Versailles and here again one can see the kind of use to which it was imagined to be put at the time. Here is the forecourt of the chateau which is still there in that form today and this immense axis leading into virtually infinity and you can see the thousands of people that throng around for the particular occasion that may have been planned by the aristocracy to entertain them. And here the axis leading on various levels done by Le Notre into the distance and from any one point one can always see in both directions a vertical disposition of what appear to be really quite two dimensional patterns only.

On the interior as much as on the outside the dimensions are just *superhuman*. Here we see the palace as it extends into the main pond on the garden side, scattered with marvellous statues and landscaping that subdues nature to the service of man or his concept of design by tailor-making it to the geometric forms envisaged at the time. When it comes to the interior of these spaces, that same proportion or gargantuan proportions persists and here the famous hall of mirrors, the only use to which in modern times that has been put, as far as most people know, is of course the signing of the Versailles Treaty; it seems an appropriate place to do that for that kind of event. I've had the opportunity of actually seeing that space when used in a private way by something like fifty people who were virtually, you know, drowned or lost in this kind of space; you can see them coming there in the distance. It happens to have been a special function put on for the members of the Museum of Modern Art in New York, the president of which is Mrs Rockefeller whose family have been instrumental in helping to restore this palace. And one can see some glimpse, probably with our own dress and our own mode, of how this kind of space might have looked with elegantly dressed people and what they do to this kind of enormous space. Fifty people are hardly noticeable but nevertheless it is a ceremonial, a theatrical occurrence to see people walk down this kind of hall and especially when they're entertained for dinner the kind of external spaces that are available to them to ambulate in and to enjoy. It is something, of course, not of our time but characteristic of the baroque.

Nevertheless, as I say, this palace is publicly visited by endless tourists and it is supposed to be the most visited building in the world, which shows that there is something valid about it still; there is something in us as much as it would have been in the Czar Peter who built this, which is said to be the largest square anywhere in the world, the place in front of Leningrad, in front of the Hermitage, his palace. And it's the largest open space surrounded by building created by buildings. We see here the Rastrelli's Palace and the way this area looks as seen from the Hermitage Palace itself; those tiny dots on the landscape are in fact huge tourist buses and that gives some scale to this enormous space.

[49.35] Now what is there in our time that can in any way compare itself to these kind of spaces and we find that those that are worth looking at at all have as much during the baroque as in our own time been commissioned by private individuals. Not so much private, maybe public but individuals; they were not the result of committee decisions. I mention this because I have a great believe in the fact that great artworks emanate where individuals act, individuals of substantial power and influence. There was one man responsible for the design of Brasilia, which is the capital of Brazil, to the design of one man, Lucio Costa, and the architect who built most buildings and that's Oscar Niemeyer. And we see an axis here between the parliament leading up to a focal

point at the crossing of this wing-shaped axis and these sort of dimensions are Versaillesian in extent. Whatever else one may think about Brasilia it is unique in its single-mindedness in the way it placed buildings along and produced such a vista that is much maligned; people don't like it, they say it is barren but it of course still in construction – I only saw it a couple of years ago - the **silhouette** of the parliament house in the distance is as remarkable as any. One could say less about the ministerial buildings that flank either side but nevertheless I think here is a single-minded approach to the problem of creating a monumental setting for the seat of government which is not to be taken too lightly.

I think one that undoubtedly outdoes Brasilia in aesthetic terms and of comparable proportions is Corbusier's Chandigarh, especially the design of the capitol buildings which are the main secretariat, the parliament house and the high court. Unfortunately, the things in between have never been built, the governor's palace and the open hand sculpture and so on and the various things that were to go on. This town, this whole city was commissioned personally again by Nehru; Nehru picked Corbusier to do this building, the building of the capitol but also design the whole complex and the dimensions are baroque in extent, they are quite enormous. We have a parliament, we have the secretariat in the distance of which these buildings are viewed as most dramatic, of course, but one really wonders whether the intervening or the elements that are really needed to make such a building be operative at all on a human scale should not by necessity be filled in rather than simply remaining there almost as giant sculptures standing in space.

Here we see a somewhat more palatable relationship of two structures, the famous portico of the parliament house and seen through it the secretariat building, and here there is some relationship between the forms and the architecture. But this really comes down to our own time's concern about urban spaces and I believe that the gargantuan proportions have to be taken somewhat with great caution in our time because here in Albury/Wodonga an attempt has been made to produce sizes of urban spaces that are far more on a human scale and related in such a way that people can really get the maximum *effect* of dramatic interaction between narrow spaces, the narrowing, the widening through a gap, then the bursting open of a space, then the narrowing again which is had been done, of course, in baroque times but on a far bigger scale.

In our own time in Canberra, of course, there is an axis which has been handed to us by the design of this town, from its capitol of absolutely baroque proportions out to the war memorial of some two miles or two kilometres – whatever it may be – but enormous in extent and this is extremely difficult to cope with and, as we know, the design of the Parliament House, crowning this very concept of placing such a building at the peak of this circular capitol hill demands a concept of design with converging axes that is quite positively baroque in extent. And the spaces that result from it undoubtedly are by necessity or by definition of the kind of the seventeenth century, you know, this kind of leading up to a building is a most theatrically dramatic thing but that not so much by the building but imposed by the plan of the town is where it comes.

To end up, I would like to show something of the other part of the world which is very rarely connected with the baroque, although much of the work done at the Imperial

Palace in Peking happened during the baroque period. Here is Tiananmen Square, outside the Forbidden City but when we come into the Forbidden City we again see spaces of this proportion which really make one believe that Marco Polo's routes were travelled more frequently, probably, than we anticipate because of the interaction that must have inevitably existed for people to conceive of such enormous spaces, both in the east as well as in the west. We saw it in the summer and here is the same kind of space seen in the winter, quite a stupendously beautiful arrangement of building silhouettes and open spaces. And what fascinates me most around in that area is the reoccurrence of that baroque curve in the front of the palace; how that would have travelled as far as the far east is hard to anticipate.

Now, in conclusion I would like to say something about the baroque in general. The baroque has been called the last great creative and innovative period before our own, there have only been revival periods in between us, but the visual powers I have pointed out they may well be coincidental but the fact remains that both eras were born of fresh thought and as with all innovation it is of relevance for us to observe and enjoy the fascinating overlap of the spatial as well as the geometric tendencies of both times.