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THE THEATRICAL AND ACOUSTIC SIGNIFICANCE OF THE FORESTAGE IN OPERA HOUSE DESIGN AND PRACTICE FROM THE EIGHTEENTH TO THE TWENTY FIRST CENTURIES

by IAIN MACKINTOSH director, Theatre Projects Consultants

The orthodox history of the opera house divides itself naturally into four parts. First is the evolution from the Teatro Olimpicos of Vicenza and Sabbionetta, of 1584 and 1588, to the seventeenth century opera houses of Venice none of which survive. Second comes a review of the form of the eighteenth century theatre : the elliptical form of Turin of 1741; the horseshoe such as that of the San Carlo of Naples of 1737; the softened rectangular shape, often attributed to seventeenth French antecedents in converted royal tennis courts, such as the Cuvillies' Theatre of Munich of 1753, and the bell shaped favoured by the Bibienas of which the Markgrafliches Opernhaus at Bayreuth of 1748 is the only surviving example. This chapter usually concludes with the neo-classical, the Grand Theatre Bordeaux of Victor Louis of 1780, which survives largely intact and which was restored earlier this year, and the Straatsoper at Munich of 1718 which has been rebuilt or radically altered three times, in 1855, 1935 and 1963. Some historians add unbuilt fantasies of Ledoux, Boullee, Gilly and Gilbert which, like the projects of Walter Gropius and Norman Bel Geddes a hundred years later, had an undeserved reputation because, being unbuilt, their sheer impracticality and rotten acoustics were never revealed.

The third part of the orthodox account leaps swiftly to the openings in 1875 and 1876 of the opera house in Paris of Charles Garnier and in Bayreuth of Richard Wagner and Otto Bruckwold. It is then an easy move for both architectural historian and musicologist to part four: modern opera house architecture. The jump is justified by the mistaken belief that Garnier's opera house was the last decadent flowering of the over decorated bourgeous theatre, complete with boxes to be seen in, while the Bayreuth theatre of Wagner was the first single tier modern democratic auditorium (whatever that means in a Wagnerian context) a precursor of architecture as "an embodiment of rational seating geometry" as American engineer George Izenour put it, the one who said "the magic can be left to the artists and the poets, once the lights are off the audience doesn't have to see where it is sitting"

The story in four chapters such as these leave a lot out, not just the post Garnier baroque triumphs of Gottfried Semper in Dresden in 1878, the Budapest Opera House of Miklus Ybl of 1964 and the scores of opera houses from Zurich to Odessa, many of which survive from the end of the nineteenth

century, by Ferdinand Fellner and Hermann Helmer. But the chief omission is something their contemporary, Sherlock Holmes, might have noticed: not the many and obvious differences between the opera houses of Wagner in Bayreuth and of Garnier in Paris but the fact that the two theatres were exactly the same in one central sense. Both had no forestage whatsoever. Both were built for an identical stagecraft. Both had wide picture frame stages (13m and 15m). Both had elaborate scenic engineering to create a nuturalistic scenography. Both soon installed the electricity, in 1881 and 1886, to enhance the verisimilitude of the pictorial naturalism that both strived to create (Adolphe Appia spotted the absurdity of this at Bayreuth as early as 1884 but his expressionist ideas were not accepted by the Wagner family until the 1950s). But the movement that had led both Paris and Bayreuth to abandon the forestage was scarcely a generation old. However, contemporary commentators failed to spot the significance of this as have most of the architectural historians and musicologists since. In all their accounts the role of the forestage is ignored, its absence unnoticed by scholars, acousticians and architects.

Neither then or now do many agree how and where the world of audience and of performer interpenetrate. Hence there is little awareness of the acoustic and theatrical significance of the forestage in opera house design from the eighteenth century onwards. As for practice, well if there is a forestage the performer will always act on it, always moving instinctively towards his or her audience whatever the philosophers of theatre suggest about theatrical illusion. This is because the performer communicates through his performance not via the scenery behind him. In any event the experts were divided. For every acoustician who suggested the forestage was acoustically necessary there was in the eighteenth and nineteenth centuries, a theatre philosopher or designer who suggested the opposite. The nineteenth century Par de Joseph Filippi detailed that the debate would always be "contradictoire entre les exigences de l'optique et de l'acoustique dans un salle de spectacle" concluding "le theatre destine au chant et a la musique doit etre contrement construit que la theatre destine au drama parle!" Up to the middle of the nineteenth century it was the acousticians who argued for the performer to advance on to the forestage while it was the theatre scholars and philosophers who wanted to remove the forestages in opera houses and playhouses alike because of the pre eminent demands, as they saw it, of theatrical illusion. This is in contract to the seventeenth and early eighteenth century traditions in both England and France to flank the performer on the forestage with additional seating for those who could afford the closest and hence best view.

The opera house acting forestage was certainly in retreat by 1860. Let us take a snapshot of this from the pages of the monumental Parallele de

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Principaux Theatres Modernes de L'Europe by Clemant Contant and Par Joseph de Filippi, published in Paris in 1860. Note the 'moderne' in the title.

However, of the 30 theatres measured, drawn and described nine had existed when Mozart was alive sixty eight years earlier. The 30 theatres, with the exception of three theatres reproduced in a state prior to as well as after reconstruction, were surveyed and drawn as they were in 1860. 29 provide enough evidence, when compared with other drawings of the same theatres before and after, to provide the following summary:

14 theatres built between 1737 and 1829 retained their forestages in 1860
9 theatres built before 1829 had already lost their forestages by 1860
6 theatres built between 1827 and 1856 never had forestages.

Of those theatres, which retained their forestages in 1860 and which also survive until today,all had lost their forestages by the end of the nineteenth century. The exception is the Opera at Versailles which has been restored approximately to its 1770 original state when completed for the wedding celebrations for Marie Antoinette.

Filippi, who wrote the text, states that an opera house should have a forestage with a minimum depth of 2.5m (8ft 2ins) and also that the arch over the forestage should be low. For a playhouse on the other hand, for which he advocated a measurement from stage to facing box of 12m (39ft 4ins) as opposed to 27m (88ft 7ins) for an opera house, he would abolish the stage boxes, "si contraire a l'illusion". Instead he advocates the absolute separation of the 'scene' from the auditorium. Thus for Filippi the forestage was not there for theatrical reasons, as it had been in the Georgian Playhouse in Britain, but for acoustic reasons.

Filippi was simply echoing the opinions of the author of the first printed treatise wholly devoted to theatre architecture, the Trattato Sopra la Struttura de' Theatri e Scene of Fabizio Carini Motta published in 1676. Motta sets down the thickness of the arched proscenium which he recommends both for theatres with a detached proscenium frame (as in the Bibiena theatres) or in those theatres where the boxes reach right up to the stage opening. The arch he says "should not be less than 4 feet 9 inches (1.4m) and no wider than 9 feet 6 inches (2.8m)" deep, measured from the upstage edge of the proscenium arch where the scenery commences to the edge of the orchestra pit. This is the area "in which the players and speakers who walk onstage, that is to say those who do not have to depend on machines, perform. Voices that are usually restricted by this thickness (ie are upstage of it) gain added projection toward the audience because of the shaping of the opening... Some say that performing in the aforementioned space is to come out of the stage picture and consequently not to be a part of the scene, but in order to be heard in the auditorium it is best to do

this, a lesser evil than to be behind the scena (ie the proscenium arch) and not be heard".

The case for being heard better out on the acting forestage was familiar for two centuries. Today this obvious matter has been largely forgotten as has the equally obvious fact that the performer in the forestage can be seen better from the side seats than when he plays further upstage amongst the scenery. George Izenour in his monumental Theatre Design published in 1979 erected an entire theory of sightlines ignoring the existence of any forestage. Izenour measured only how much of the framed picture the spectator could see, ignoring that in many theatres the performer generally performed in front of the scenic picture. No wonder all the theatres that once had forestages fared badly and all his mechanised monsters with overlarge scenic openings scored top marks in an 'objective' test he had himself rigged. Of all types of theatre familiar to this audience that have bad sightlines the rectangular 18th century opera houses and playhouses such as the Cuvillies Theatre, Munich (1753) and the Theatre Royal Bristol (1766), have the most to gain by restoring the forestage as the principal acting area. The sightlines in these theatres, managers plus George Izenour please note, are bad because they are measured to the wrong point.

More elusive an argument for the reinstatement of the forestage than the measurable matters either of acoustic advantage or of angle of sight is the metaphysical one. The forestage is the sacred area where the worlds of audience and of actor interpenetrate. This is where intimacy, even congress, takes place. Upstage behind that rigid picture frame whether that of Wagner's or of Garnier's or of Paramount Pictures', the theatrical event is removed, circumscribed, impervious almost to the reactions of the audience confronting the action on the other side of an impregnable wall of illusion.

Enough, for the moment, of philosophy. Let us look at three theatres from the time of Mozart, two of which he worked in, and compare them as they are now, in each case erroneously regarded as 'authentically restored', with how they really were and were used when built.

The first is the Cuvillies' Theatre, Munich of 1753 where Mozart premiered Idomeneo in 1781. This theatre was dismantled in 1943, when the american bombers threatened Munich and was re-erected and reopened on a new site in 1958. The difference between the theatre as built and as it is today is obvious. The orchestra pit now occupies the zone where previously the performer acted out on the 'avant-scene'. The performer is now restricted upstage as much by the lighting as by the encroaching orchestra pit : there is now one of those massive German steel corsets of a proscenium bristling, with lights which can't point downstage but only upstage, from which the performer can not escape. No wonder the visitor believes that the side seats were for being seen in rather than to see and hear the show : the

performance now takes place at least 20 feet further away than it did in the eighteenth century.

The orchestra pit is bigger too. There is even a revolve. Compare how far all is pushed upstage with what is suggested in a wonderful illustration from L'architecture Bavarois of 1771 in which the device for levelling the floor of the parterre for the promenade of a state ball is clearly shown.

Compare the two drawings of the Cuvillie theatres then and now. Let us review the losses and gains in removing the forestage.

The gains are:-

- three more rows of expensive parterre seats
- the inclusion of the performer within the scenographer's picture.

The losses are:-

- worse sightlines from the sides of the auditorium to the action now moved further upstage
- less acoustic support for the singer who now sings under the flytower rather than on the forestage or at the front of the scenic stage where he had the advantage of the sloped ceiling over the forestage
- an exaggeration in volume of the orchestra especially the woodwind and the brass which now has the advantage of the ceiling
- the breaking of the close contact between performer and audience at his side in the stage boxes which, by capillary action, transferred energy to the entire audience beyond

Over now to Bayreuth, the original theatre which, ironically, brought Wagner to Bayreuth in the late 1860's : the Markgrafliches Opernhaus of 1748. The form of the theatre is the characteristic bell shape of the Bibienas evolved from Motta's concept of over 150 years earlier. Plate III of the parallel drawings by Pierre Patte in his Essai sur Architecture Theatrale of 1782 shows four theatres that had forestages but subsequently lost them - Turin, Berlin, Bordeaux and Paris - one which was dismantled before fashions changed, the Ducal Theatre at Milan, one with a curious thrust stage which it too has lost, the surviving Teatro Communale at Bologna of Antonio Bibiena, and two that apparently never had a forestage, the Teatro Argentina, which consequently had bad acoustics as Michael Forsyth reports in Building for Music - and the theatre at Mannheim designed by Alessandro Galli-Bibiena as was Bayreuth.

The question is whether Bayreuth was like Mannheim. I used to think so. Every guide book, every history book promises that the theatre is unchanged. Even the elderly Bavarian professor in charge of the building assured me that the flattened stage was the only modern alteration when I was shown round as a guest of the German government in 1976.

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But there exists a plan, reproduced let it be said by Michael Forsyth in Buildings for Music but not remarked upon, which shows the theatre as it was with a deep forestage. Clearly the flattening of the stage was not the only improvement to be made in 1935 by Professor R. Esterer. Look again at the short stairs each side which now connect what used to be forestage entrances with the orchestra pit. These are sheer Disneyland - possible as a link for revellers when the theatre might be used for masked balls but inconceivable as permanent bookend for performers and musicians.

Compare the theatre as it was and as it is. The orchestra rail has not moved : what we have now is an area for the orchestra which is twice as large as it originally was now that it has commandeered the entire forestage. Note that carefully: the expansionist actions of the pit musician led by their maestro in search of Lebensraum may turn out to be a main factor in the abolition of the forestage at Bayreuth and, possibly, everywhere else.

I will not dwell too long on the third of the so called authentic eighteenth century theatres, the Tyl in Prague, formerly the Nostitz Theatre opened in 1783, as this is the saddest case of all. Half the world's press were told last fall that the Tyl had been restored to the state it was in for the premiere of Don Giovanni in 1787 as a commemoration of the 200th anniversary of the death of Mozart. What had in fact been restored was the 1882 theatre interior within the shell of Anton Hackenacker's theatre of 1785, itslef drastically altered, because the whole building was raised by a full storey. This was the interior that was passed off as eighteenth century in the film Amadeus. This was the interior also used by Josef Sroboda in 1969 for the famous mirrored production of Don Giovanni when the auditorium was repeated on stage. But this 19th century neo-renaissance style of 1882 has about as much to do with Mozart as a box of Mackintosh's Quality Street chocolates has with Dickens or today's Covent Garden theatre with that of Handel.

Today's designers and directors push their scenery through the proscenium until the jagged edges of the new scenography barbecue the conductor. Nets are installed to prevent the ever further downstage singers tumbling into the woodwind. The positioning and power of modern stage lighting is no longer confined to the stage as it was from 1880 to 1950 and hence allows the performer out of the picture frame. It is also returning us to the situation that existed in the eighteenth century when the auditorium was almost as brightly lit, with its candles and oil lamps, as was the stage. Today, as then, the performer and the audience are sharing a single architectural space. In a painting of the opening of the Turin Opera House in 1740 (the opera is Metastasio's Artace) the singers are firmly positioned on the forestage, the setting probably by Bibiena, almost indistinguishable from the auditorium also decorated and designed by Fernando Galli Bibiena.

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In the eighteenth century the debate about whether or not there should be a forestage raged even if it does not today. And as indicated earlier acousticians and acoustically minded architects were at odds with theoreticians such as Count Algarotti who, in his Essay on Opera, published in English in 1767, was establishing a new aesthetic. It is worth studying Patte's exercise in demonstrating the efficacy of an elliptical form in his diagram printed in 1782 while listening to the words of Algarotti (although he talks of 'actors' and 'dramatic exhibitions' he is actually referring to singers and opera). Algarotti is criticising architects who "made the stage whereon the actor performs to be advanced into the parterre several feet; by that expedient the actors were brought forward into the middle of the audience and there was no danger of there not being heard ... But who that reflects does not see such a proceeding is subversive to all good order and prudent regulations? The actor, instead of being so brought forward, ought to be thrown back at a certain distance from the spectator's eye and stand within the scenery of the stage in order to make a part of that pleasing illusion for which all dramatic exhibitions are calculated". In 1790 Englishman George Saunders echoed the thought : "the great advance of the floor of some stages into the body of theatre is too absurd ever to be practised again... The stage front should be straight and project no more before the scene than does the frontispiece (by which he means the frame to the proscenium arch) and both should project as little as possible".

The English did not listen to Saunders, at least not for a century. In 1809 Pugin painted a watercolour of the Opera House in the Haymarket showing the depth of the acting forestage. In Contant et Filippi the same theatre, built by Novosielski but altered by Marinari, is shown as it was in 1860, still with a deep forestage some 24 feet deep. Albano's Covent Garden, the Italianate interior inserted within Smirke's earlier building which lasted from only 1847 to 1856, had a deep acting forestage on which the singers did perform. Even the present theatre retained a small bowed forestage which was subsequently removed : the stage of the present Royal Opera House as built by Barry in 1858 had nearly ten feet removed in 1899 when Sachs flattened the stage.

But throughout the nineteenth century the forestage lingered on. As built the San Carlo in Naples in 1737 had a small bowed forestage. The singers could not be heard. In 1765 English traveller Samuel Sharp wrote that the spectator "immediately perceives this structure does not satisfy the ear how much so ever it may the eye". Before 1809 when architect Nicolini started to replan the front of the theatre the size of the forestage has been increased as both drawings and paintings tell. But by the time Fillipi and Coutant published their findings in their Parallele in 1860, half of the new large forestage had vanished. Now it has all gone and the stage boxes at Naples, as in every other opera house in Italy, stand sentinel over the 'gulfo mystico' of the orchestra pit rather than embrace the performer on the forestage.

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Thus in the hitherto carefully balanced ensemble of auditorium, orchestra pit, forestage and scenic stage, one element, the orchestra pit has enlarged itself to the point that the sound from the pit has become the determinant of the place and significance of each and every other element. The orchestra pit, which in 1676 Mottta said should be no less than 4ft 9ins (1.4m) wide and 6ft 4ins (1.85m) deep, has taken over, devoured the forestage and now presents an almost unbridgeable barrier between performer and audience.

In 1981 Peter Brook was interviewed after the opening of his radical reinterpretation of the romantic opera Carmen by Bizet. He was asked whether "opera houses reflect all the conventions you are challenging in their very layout" he replied : "That's why with Carmen it was necessary to change all of the conditions at once. In the past there was a small orchestra, only slightly below the stage. Almost imperceptibly the orchestra has grown like a giant mushroom and has been driven ever deeper under the stage. In order to make more noise, it had to be enlarged further, to the point where it has become ridiculously inappropriate and out of scale. The resulting competition between the human voice and the immense orchestra can be compared to the history of the dinosaur; after a certain point, it became so top heavy that it toppled over. An orchestra which is too big for the human voice creates an artificial demand; the singer is obliged to adopt attitudes which aren't natural. In order to be audible, he must face the auditorium and remain as near as possible to the front of the stage. As a result, the performer can rarely take up positions and move in a way that corresponds to dramatic truth. In general, the form of the opera production is imposed as much (and perhaps more) by the layout of the auditorium as by the director. Besides, the dignity of a musician is demeaned by putting him in a hole in the ground; this reflects a nineteenth century attitude, the master above and the servants below the stairs".

The questioner then asked what sort of opera house he would recommend for the new Bastille then under construction - they built in fact the biggest dinosaur imaginable if you recall. In 1981 Brook replied that "one cannot create an opera house because no one can say what resources, production forms and staging the next hundred years will require... As there is no solution those who are unfortunate enough to build new opera houses have to make a sort of compromise between all available forms".

I think we as contributors to the design of buildings for musical performance can and should do better than that although it must be admitted that the acoustician, the theatre consultant and the architect of today are not making much of a job of it today if we are to judge by Amsterdam, Houston or the Bastille. The acoustician who, like a travelling salesman, offers the maestros of the moment what he hopes will be an irresistible range of acoustic options must be stopped in his tracks and asked to

refrain from being all things to all men. Rather should he reconsider what happens physically and spiritually when opera succeeds. The acoustician Rick Talaske who wrote in Halls for Music Performance in 1982 "first rate facility can be rapidly changed to accommodate a variety of events from music to drama by the use of such devices such as movable walls or ceilings. It is easy to shift the emphasis from romantic to baroque during a brief intermission and, three or four hours later, to have a stage fully rigged for drama or opera" needs to be told that a market led approach to design has never resulted in great theatre. The theatre consultant offering orchestra lifts in five parts, sliding boxes and flying over the forestage risks drowning a problem which is architectural and metaphysical with tidal waves technology. The architect of today's opera houses who, unlike their predecessors, seem to be chosen for their experience outside of theatre, are scarcely aware of the problem and actually prefer a neat separation between the stage, which is controlled by the stage designer, and the auditorium, which is controlled by the architect. Our job as designers of theatre space is neither to be all things to all men nor to trim our sails to the wind of fashion which will surely change. Our job is to reexamine fundamentals, rethink the process of opera making and opera going and then to present, with conviction, some fresh ideas. These will, I suspect, be a contemporary recasting of old ideas.

In what lies the enjoyment of performing arts? Professor Sir Isaiah Berlin said recently on BBC when praising the piano playing of Arthur Brendel : "Art is not a beautiful object. Art is communication. To understand art is to be spoken to, to be addressed". The first word or phrase in this communication is spoken or sounded by the performer. We the audience must then be ready to react, to re-circulate the performers' energy through evidence of our own reacting sensibility. I do not believe this will be truly possible until the forestage is restored to its central position, literally, in the centre of the house where performer is able to reach out to touch us spiritually and physically.

There needs to be some concessions. The pit musicians may find their numbers reduced as much for economics as for aesthetic reasons. The maestro must trade resources for visibility and bring the musicians out from those deep pits. The musicians will them emerge like the prisoners in Act III of Fidelio, and reach a place where they can see. There they must learn to keep their elbows in, to take up less space than on the concert platform and to squeeze up as they did in centuries gone by. They may gain emotional involvement at the expense of so called necessary space which they have hitherto enjoyed down the mineshaft.

The manager will lose three or four rows of the most expensive seats as the smaller orchestra pit finds its previous more central position when it will have evacuated the forestage zone which it stole from the performers in the mid nineteenth century. But the manager will now be able to sell more

easily the side sides which once again will be able to see most of the action.

The designer may not be able to hang scenery over the forestage (if he were to it simply becomes part of the scenic stage) but has the excitement of projecting floors out into the house where a significant part of his creation will be seen from three sides. Thrust stages in the English speaking theatre in the fifties and sixties brought new scenic opportunities when the problem and the possibilities were finally understood - and today nobody can say that the design work by Chloe Obolensky for Carmen, The Mahabharata and The Cherry Orchard in Brook's theatres in Paris, New York, Glasgow and elsewhere has not been profoundly exciting.

Above all the singer benefits. Today in the overlarge houses without forestages the management must book stars with superhuman voices who can project from amongst the scenery over the huge orchestra and still give the semblance of a theatrical performance. Such mega stars are in once sense freaks : they have talents so extraordinary that they are marked out from the rest of humanity. Hard therefore for the audience to think of the character when it is the voice and face that is world famous, hard too for the managers to pay the fees in what is a sellers' market. Restore both the acting forestage and reduce the scale of the new theatres closer to that of the older theatres and good but not necessarily great voices will achieve excellence. Opera will become more accessible again both physically in performance and financially at the box office. There are signs that this is happening : compare the enjoyment of a super star Cosi Fan Tutte at the Royal Opera House in London or the Metropolitan Opera House in New York with the electric achievement of David Freeman's Opera Factory production of the same work at the Queen Elizabeth Hall and in Europe when the orchestra was on stage and the reality and theatricality of this wonderful drama shone forth without any musical loss.

The dinosaur is nearly dead. Those huge opera houses of the nineteenth and twentieth centuries will be the first to go or be retained simply for gala occasions with the superstars until those too are carted off to Earls Court or Central Park. But opera will survive in the smaller houses provided we can imbue these with the sensuality of the old as well as the flexibility of the new and there celebrate the congress of artist and audience. We need spaces which have a spiritual and celebratory essence, places for people to connect, to move one another and to create those moments of ecstasy impossible to experience from CD, video, film or any other passive medium.

The opera houses in which this magic can be reborn will have forestages or at least platforms for the performer thrust out into the auditorium not unlike the acting forestages of the eighteenth century, not unlike the

thrust stages and environmental spaces of recent playhouses, both the purpose designed ones and the found spaces. The new theatres will allow the reduced scale orchestras to sit at the side, at the back or in a smaller pit of variable height which can be pushed out towards the centre of an auditorium that once again embraces both singers and orchestra. The new houses will not have huge wagon stages as at the Bastile Opera House because nobody will be able to afford a repetition of huge scenic effects. All that engineering energy is misplaced : effort and creativity now needs to return to the auditorium in general and to the zone containing orchestra and performer on the acting forestage in particular. In order to understand the future we must talk to the composers, directors and designers of today. To clarify our thinking we must learn to analyse the acoustical and theatrical significance of the forestage - or the lack of it - over the last 300 years.

To fix in the mind the immediacy of the performance on the acting forestage in a mid scale opera house towards the end of the 18th Century I show two illustrations. One of a theatre in Paris, the other in Warsaw, both from the age of Mozart. These two images bear vivid witness to the actor audience relationship that did exist before the orchestra swelled and gobbled up the forestage. We can, I believe, recover this immediacy.

Thank you.