

21ST CENTURY THEATER – REGRESS OR PROGRESS?

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Abstract

Theater as such is mostly defined through a relationship between play and observation. Such interplay results in a final product with either lasting or fleeting spatial form, and such spatial form ensues from a broadly understood function it is meant to fulfill. Therefore, the aesthetics of stage objects will involve the shape of the building as well as the stage pictures that are created in it and in its factual or significative proximity. To put it in simple terms, present-day global trends in theater construction seem to be headed in two directions. The first one involves standard solutions for the stage layout in a representative facility. They are addressed to the majority of audiences. The second trend is a form of relationship between the areas of play and observation. It is an embodiment of the creative idea of the people of theater, and, oftentimes, it is an outcome of advanced and complex creative ideas combined with many years of experience. It is an ambitious theater, in many circumstances bordering on an experiment. The discussion of aesthetics of theater facilities and stage layouts was conducted on the basis of judgments expressed by Władysław Tatarkiewicz and Umberto Eco. Despite being seemingly different, they are generally similar.

Keywords: Aesthetics; Theatre; Stage; Audience; Technology; Structure.

Theater architecture is a term that is defined in professional dictionaries. It forms a separate quality from intangible as well as tangible point of view. Following the end of World War II, there was a boom for this type of construction, however, one cannot say that such facilities flourished. In terms of solutions, the newly constructed buildings as well as those that were renovated and modernized followed the principles of Baroque relations between the stage and the auditorium. It seemed that the contributions of the Great Theater Reform had been forgotten [1]. However, early 1960s witnessed emergence of trends aiming at breaking that spatial form. This occurred in the period which was referred to by Kazimierz Braun as the Second Theater Reform [2]. This revolution – and it was indeed a revolution – was triggered by worldwide theater avant-garde which included such celebrities as, among others, Tadeusz Kantor and Jerzy Grotowski. Nevertheless, despite all the avant-garde, in Poland as

well as globally, there still dominated a stage layout with a proscenium and an apron that separated the stage from the auditorium. What followed was a rift between the world of theater and the architects whose efforts aimed at creating an innovative form, which stood in contravention with the expectations of stage arrangers who had the knowledge of the art of theater. Of course, the trend of avant-garde lasted and thrived but it became an alternative to the mass art. The split between space for opera and drama has become less pronounced. Usually efforts were made to combine the shows with completely different technical requirements in a single mobile layout. Frequently, this was contrary to the opinions of technologists and acousticians. A compromise solution involved setting up – next to the opera hall – a smaller hall that would meet the conditions of the “spoken word”. All those solutions always boiled down to a single principle that was reiterated on several occasions by Stanisław



Figure 1.
Calatrava's building complex visible from the tower next to the Cathedral, exterior of the opera, and the main opera stage visible from the stage. Photograph by author

Wyspiański: the viewer has to first see it and then hear it. Santiago Calatrava designed a building complex in Valencia, Spain, with a very rich, detailed and diverse form. The complex, whose shape resembles a fish, houses several stages and auditoriums, which are separated from one another, along with a large number of open fields of theatrical creation. However, none of those spaces meets the acoustical conditions that should be expected of such facility. This asser-

tion may be proven by a single standard example: the building complex contains a large opera hall for 1400 seats in which emphasis has been placed on the expression of structure. The striking white of the accented forms may significantly affect (and does affect) how the audience sees the show. According to the designer's intentions, concert halls and drama theater halls have similar shapes. In case of this building complex, it is clearly evident that the form has pri-



Figure 2.
Location of the Copenhagen Opera House on the extension of the representative axis, projection of level 0.0 and interior of the opera house. Photograph by author, illustration from the author's archive

ority over the purpose. One needs to ask a question whether such architectural structure is to serve the art or is it a monument to its designer?... [Fig. 1]

Besides the aforementioned halls, the facility also contains a dozen or so spaces that may be adapted for a theater. After analyzing such complex solution, which is difficult for a visitor to comprehend, one may conclude that the locations of the halls and the presumed theater venues have been selected by an accident. The only coherent thing is the access from a fairly spacious foyer to the opera and concert hall.

However, one needs a tour guide to navigate through all the other open or closed spaces.

Unlike Calatrava's solution, the Henning Larsen Copenhagen Opera House meets all the functional needs. Its shape aligns with the historic representative axis. It is located on the bank of the harbor and serves as modern counterbalance for the Baroque church located on the opposite shore. At the same time, it is consistent with the post-industrial landscape that is currently being transformed. It is a well-balanced building which houses a large concert and opera hall

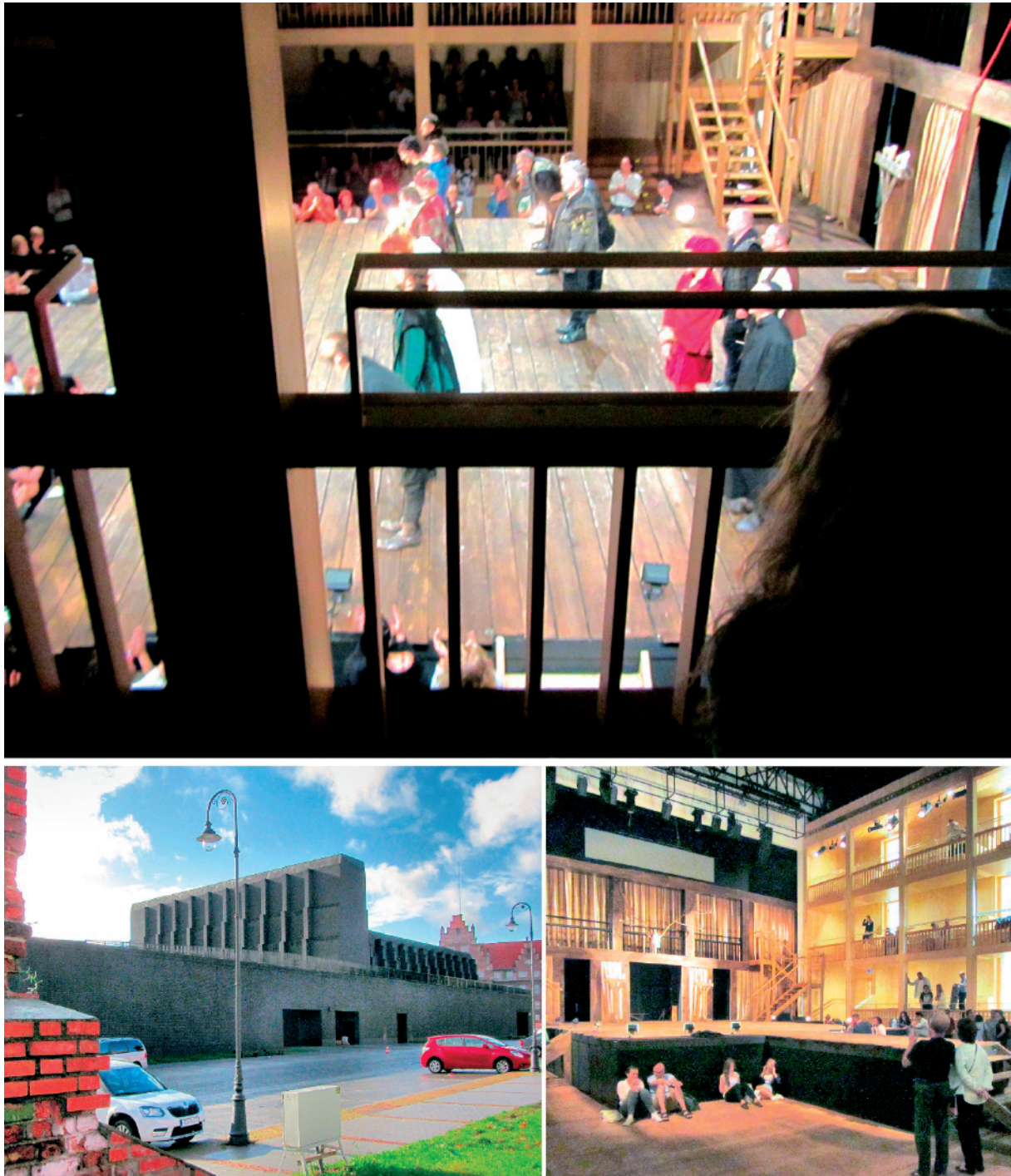


Figure 3.
Exterior of Theatrum Gedanense, stage-audience in the Elizabethan layout, and curtain call. Photograph by author [5, 6]

for 1700 seats as well as a smaller, chamber room for 600 seats intended for drama theatre shows. The mobility of the opera hall practically does not exist, which is consistent with the author's intentions. Even though the incline is quite moderate, the viewer may

comfortably watch a show from every ground floor seat. The same is the case on upper levels.

The user and the designer placed great emphasis on the show technology. The projection of the stage along with the expanded back facilities resemble the

Bastille Opera House. The back facilities with the stage have the shape of the square. The entire technical space jointly with the stage constitutes an integral entirety. The solution serves the functional principles. [Fig. 2]

Opera Houses in Copenhagen and Valencia have one thing in common: the Baroque principle of the stage and the auditorium. Apart from that, there are no more similarities. It is evident that, from the point of view of viewer comfort and stage adaptation possibilities, the two opera houses are completely different. When designing the opera stage, Henning Larsen took into consideration the broadly understood needs of show creators. Moreover, he unequivocally divided the space into zones for viewers and actors, and he subordinated to those functions any layouts of play and observation as well as any layouts of the auditorium and the show. The monumental structure of the building is an outcome of a compromise between a functional solution and a form that encloses it. Such creation stands in complete opposition to Calatrava's philosophy for whom the starting point was the form. The sketches of the Valencia Opera House have been preserved. The designer adopted the same philosophy for the auditorium in Santa Cruz de Tenerife, Canary Islands, which he previously had worked on. The effects are similar. It is evident that in his effort to reach the final solution, the designer makes the viewer's comfort and the show technology less important. One can clearly see that the most important thing for the designer was to preserve the initially adopted form, and he didn't give much regard to the function which was forcefully "put into" the rigid and inflexible layout. This does not apply only to a relation between the stage and the auditorium and the communication layout inside the building. This has a direct impact on the functioning of every field of theatrical creation.

Following the evaluation of these two facilities, we can adopt criteria for assessing their aesthetics. They should relate directly to the user's experience – because such facilities are erected for the user.

First and foremost, the conditions mentioned by Stanisław Wyspiański must be met. Of course, Wyspiański, who was one of the main initiators of the Great Theater Reform, meant the events that were taking place on stage. Any other experiences, including during intermissions in foyer at the (representative) building entrance, only supplements the experience of the theatrical play. In addition, the building's excellent form must surrender to the experience of the viewer of the play. If the conditions of viewing

and hearing clarity are not met, the rationale for the building's existence will be lost. This will also be the case if the stage creativity is restricted [3, 4].

Theatrum Gedanense in Gdańsk was to be planned as a reconstruction of the former fencing school. Several conceptual designs were created but none of them satisfied the expectations of the people who were behind the idea of re-creating the building. Ultimately, international competition was held, which was won by Italian architect Renato Rizzi. The post-contest version of the design consistently carried over the visibility problems which had plagued the design submitted in the competition. They were only slightly corrected during construction, however, this did not bring about the desired effect. The building height was already defined, and when the incline was only slightly increased, the ceiling above the last rows became lower – resulting in non-compliance with the regulations [Fig. 3].

Retractable roof over the ground-floor auditorium is problematic. No screens were installed that would guide the sound in a proper direction, resulting in lack of adequate audibility.

It is quite surprising that during the construction of the theater building and even shortly after its commissioning, the opinions on it were enthusiastic. Such opinions were expressed by architects as well as the people of theater. They liked the interior and its splendor; they revelled in perfect finishing as well as that the building really has the feel of a theater. The problem was that the people, who were saying it, were the pundits who apparently had no extensive knowledge of the subject. The first ones to criticize the project were the viewers. They pointed out what the technicians and the architects critical of the *Theatrum* project had been emphasizing already during its development. The allegations were very blunt: the Elizabethan stage is not visible from the galleries because of too small incline and too many pillars supporting the galleries. This problem is even more burdensome when plays are staged on the acting area behind the proscenium. The viewer doesn't give any regard to coexistence of the open Shakespearean stage and the stage with the proscenium. They just want to view the show and have a great time. As a result of viewers' complaints, the number of seats in galleries was reduced by as much as one-half [7].

Now it is possible to return to the discussion of theater aesthetics evaluation criteria. In case of *Gedanense*, the shape of the building is, to say at least, controversial, while the stage-auditorium complex gets mostly positive reviews. But it seems that

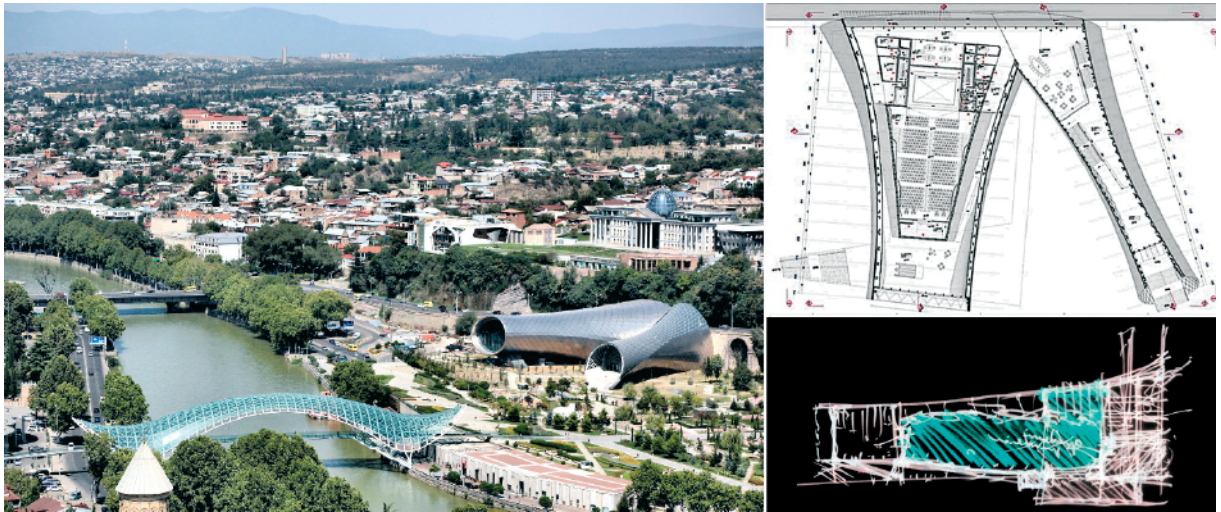


Figure 4. Tbilisi Theater visible from the nearby hill, projection of main level and author's sketch (Fuksas) of longitudinal cross-section through the auditorium. Photograph by author, illustrations from the author's archive

the viewer's overall impression will be "average". If the viewer is dissatisfied with the show, they will also not have a good opinion on the venue. Therefore, a general good impression of the beauty of the theater architecture is only one of the components of the spectator's experience. An unparalleled, unique and fancy form of the building, which, nevertheless, does not have the spirit of the theater, is just a meaningless multi-spatial sculpture, or, so to speak, an empty shell.

In 2013 a theater was built in Tbilisi, Georgia according to the design by Doriana and Massimiliano Fuksas. It is not necessary to consider whether this structure is an town planning misunderstanding or not. It is an extreme example of "forcing" the function into a rigid encasing that seems to have nothing in common with the cultural purpose it is supposed to serve. The impression of chaos is exacerbated by two strong shapes that stand in stark contravention with a next-door government building that has conventional proportions.

Due to limited height, the designers were unable to accommodate the vertical decoration change mechanism because there was not enough room for stage barrel. This shortcoming is not compensated for by low forestage. Because there are no off wings, it is impossible to change decorations horizontally. The only thing that the theater has is a small back stage which, because it is located next to the road, can serve as "temporary" decoration warehouse. Space for actors also doesn't look good. Dressing rooms are cramped, and there is no clear separation between

the part for actors and the leisure area for spectators. In case of conventional theater with a proscenium and an apron, such division should be clear [Fig. 4].

This aggressive form of Tbilisi's cultural facility, devoid of any connection to the surrounding environment, stands in contravention with the generally accepted standards of aesthetics. However, it is impossible to consider architectural refinement in the context of its form and connection to the surrounding environment without any regard to the interior and its functions. Each of those "partitions" of aesthetics should be looked at in categories of beauty and ugliness. It is evident that those terms need to be taken into consideration. A plausible and universal definition of beauty is provided by Władysław Tatarkiewicz. The basic concept is not the beauty itself but its experience and aesthetic mindset. In the most simplified terms, it is something that is perceived by most of people as beautiful but is rejected as such by a single individual. Of course, this can be reversed. What most people consider ugly, may be interpreted by certain individuals as finite beauty. Nevertheless, in his deliberations, this outstanding Polish philosopher (i.e. Tatarkiewicz) makes an exception for absolute beauty of Classical Hellenistic theaters. However, he doesn't take such a decisive stance with regard to Medieval art. Please note that such opinions are supported by the analysis carried out on several layers, starting from the studies of proportions and ending with acoustical analyses [8, 9].

Umberto Eco's viewpoints frequently supplement and overlap the perception of beauty defined by prof.



Figure 5.

Statue of Laocoön and His Sons from 1st century BCE, excavated in 1500s, presumably in the presence of Michelangelo Buonarroti, and Discobolus of Myron from the middle of the 5th century BCE. Photograph by author

W. Tatarkiewicz. Umberto Eco invokes the statue of Laocoön and His Sons (approx. 1st century BCE) on two occasions: when contemplating the “romantic rehabilitation of ugliness” and when allocating the figural composition with a highly dramatic expression to the ideals of Classical Hellenistic Greece. Such opinion is not unambiguous. That is not the case with Discobolus of Myron. [10, 11] [Fig. 5].

The book edited by Umberto Eco (he is the author of most of the chapters) entitled “On Beauty”, names architecture as the dominating branch of art on several occasions. However, Eco’s another book, “On ugliness”, approaches that subject in a somewhat sketchy and vague manner. This fact may be interpreted as follows: the boundaries between beauty and ugliness in architecture are more blurred than in other areas of art that comprise it. Therefore, it may be risky to classify the works of architecture in an unambiguous way.

Delphi Theater, which is located on the southern slope of the hill and slightly deviates to the east from the north – south axis, is “softly” embedded in the

landscape to create a unique scenery for creators of theatrical shows. French architect and archaeologist Didier Laroche committed 30 years of his professional life to studying the structures of Delphes. According to him, the location of the theater was selected to ensure the best flexibility for drama theater forms at that time. The location of the auditorium with respect to cardinal directions is not accidental: it is consistent with the worship of the Greek god Dionysus. Moreover, the temple of Apollo,

which is located nearby, is similar to the Athenian complex situated at the bottom of Acropolis. The scenic characters, illuminated by the rays of the setting sun, are gaining additional attributes. They become more explicit, looking like statues on the mountainous background.

The research conducted by D. Laroche has proven beyond any doubt that the Delphi Theater didn’t have the skene building. The decision not to build such structure seems to be premeditated. Such decision is justified by the mountainous landscape that acts as background for the *proscenion*. Such back-



Figure 6.
Delphi Theater, picture taken in late afternoon, and *The Suppliants* by Euripides, picture taken during the 1936 stage performance.
Photograph by author, photograph from the author's archive [12]



Figure 7.
The Globe Theatre of London and the Elizabethan style stage of Les Bouffes du Nord theater in Paris. Photograph by author, photograph from author's archive [5]

ground may well serve as a universal component for practically every ancient theatrical composition. Present-day theatrical shows require a platform that is accessible from multiple locations and doesn't obstruct the view from the auditorium, including the first row. According to (proven) thesis of prof. W. Tatarkiewicz, the Delphi Theater constitutes unquestionable beauty which is comprised of all the "theatrical" as well as "non-theatrical" components [13] [Fig. 6, 7].

William Shakespeare determined the relation between scene and audience based on the ancient theater model. Maybe it's an accident, but the landscape, which used to dominate the stage, is missing. It has been to certain extent replaced due to change in the form of the drama play. The idea of the viewer-and-actor theater has been broadened, and the landscape was replaced by more enhanced content. Every

passage by Shakespeare affects the imagination, hence no other description is needed. Shakespeare mastered the art of transferring the entire meaning of the show to the characters of the drama play, in other words, to what is happening on stage [14].

Peter Brook seems to have borrowed that idea from him. Under the hand of the master, every theatrical space is gaining new and previously unseen quality. One can list many examples of stage plays written by him, however, the most famous one of them is "Mahabharata" which has seen several adaptations in various sceneries. This play is considered the great synthesis of theater. The meaning of this term is broad. On one hand, it is the work by the great theater "magician", and, on the other hand, it's the summary of the modern theater which sets the direction the theater should go and will go. This also is a great synthesis viewed in the context of a connection

between the theatrical space and the drama play. The pace of the action is dynamic and ostensibly decelerated at times. It intertwines with what is physically stable and completely fills up the spatial conditions, no matter what they are. At this point, the following should be asserted: The action of Peter Brook's "Mahabharata" is taking place in the space that should be considered native. In other words, in the Classical / Elizabethan space without any barriers, i.e. the only one that is suitable for the drama play.

On the other hand, the production does not impose any spatial dogma. According to the adopted principle of arrangement, it can be staged anywhere. However, it will always have its roots in the Classical theater.

No matter whether you watch the adaptation of the play in the Avignon quarry, the Athenian Petra or in the Les Bouffes du Nord theater in Paris, the show is always open to multiple interpretations, and the director's intentions are transparent in each and every case. What is "impossible to translate" is explained by artistic means.

One should also mention the film version of the Hindu epic, which doesn't contribute anything new to the drama but it also doesn't pauperize it in any way. What the author really wanted was for his message and his vision to go mainstream. Watching, or perhaps I should say, deep examination of the movie version of Brook's play makes the viewer arrive at yet another important conclusion. Film and theater are usually considered two completely different media. These are two different forms of expression, and the space, where the action is taking place, is viewed through optical means. The space-time continuum, in which it may be "taking place", exceeds the boundaries of reality. Brook, so to speak, wipes out any gaps between the media. The fact of the matter is that this was not discovered by this particular author. Such attempts were made and are still being made by many stage arrangers. Nevertheless, the director is guiding the action with a "firm hand", and the dynamics is achieved by word, gestures as well as gradual and balanced buildup of pressure. The picture has been edited from several (3–5) cameras. Important things are brought to the forefront thanks to manipulating the acuity, with minimum resources involved. The author utilizes them as much as possible. Suggestive meditation scenes transition into military battle scenes in a fluent, and sometimes even static manner, as intended by the director.

The first row of the auditorium in the 19th century Les Bouffes du Nord theater in Paris is on the same level

as the open stage. Hence, the contact between the spectator and the actor is very close, which makes the viewing experience very intense. Peter Brook "made" the theater for himself, and the stage architecture was adapted to his needs. Renovation of the facility involved mostly conservation work, and the existing structure was not changed in any way. Brook wanted to preserve the building in the condition in which he acquired it. The restoration work was conducted in 1974 and mostly involved protecting the facility's technical condition. Actually, the only substance that was valuable to him was the theatrical space, which was consistent with Brook's concept, and everything was subordinated to that theatrical space.

Theoretically, this is the layout of the auditorium with the open stage, and the stage arranger may arrange this space in any way he/she wants using simple means. Based on the sketches from the theater's archives, the 1876 layout of the auditorium was in the Italian Baroque style. It may be accepted as standard because the spatial solution doesn't contain any discernible traces of the "French system" described by G.C. Izenour.

The documentation for the axial cross-sections shows that the auditorium had an access to the ± 0.0 level and had an incline that had been made using carpentry methods. Like in most Italian Baroque theaters, three balcony levels were correlated with a proscenium and an apron. Proscenium in the form of a wheel segment protruded only slightly (approx. 3 m). After dismantling the "ground floor" auditorium, Brook obtained an open space in which he could arrange a show, and the spectators were seated only on galleries.

Low costs of modernization and customized renovation carried out in 1974 (10,000 pounds) show that Brook intended to achieve precisely such space. After ground floor disassembly, the only structural elements that were mobile and could be easily dismantled were the three modules of the auditorium, which could be arranged in any configuration on the flat ground floor located on the same level as the stage. In addition, grate was installed in the fly tower, and light guides were fitted along the auditorium perimeter on two upper balcony levels [15] [Fig. 8].

The interior was left in the same condition in which it had been taken over. Theater professionals, who worked in the theater at that time along with Brook, made very critical remarks as to the usefulness of the stage. The building was in need of significant renovation, otherwise, it would risk being slated for demolition.

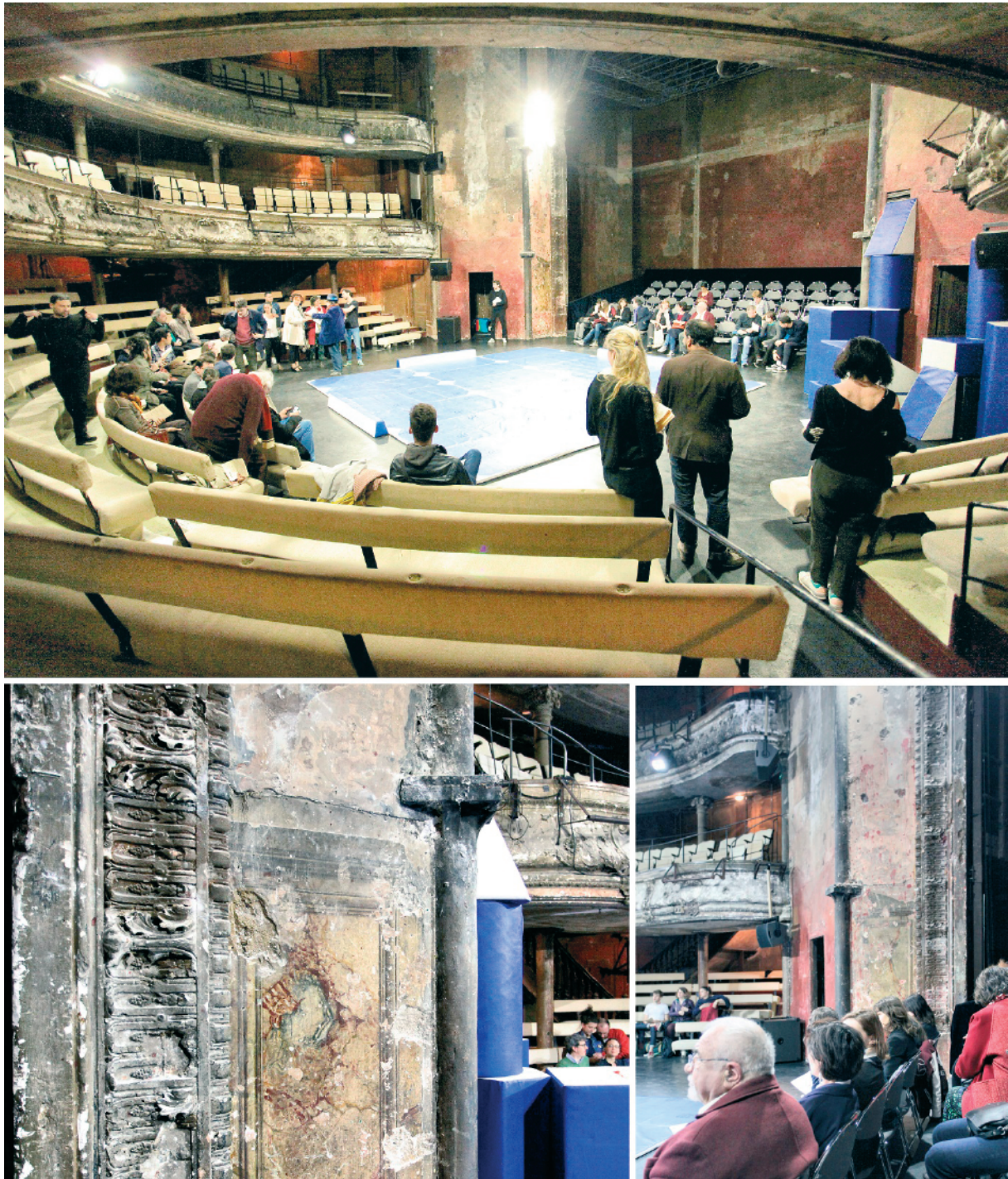


Figure 8.
Stage of Les Bouffes du Nord in an arena layout; details characteristic of the specific aesthetics of the auditorium. Photograph by author

Brook was consistently and methodically cutting all the connections to the “smooth and beautiful” theater and he went towards an impoverished one, however, he understood that idea slightly differently than Grotowski. He asserted that theater had started as a

ritual. He pursued the viewer-and-actor theater, abandoned any decorations, placed emphasis on costumes and utilized the light which he considered the only important achievement of the 20th century.

The “poor theater” idea inadvertently manifested

itself in Les Bouffes. Brook is seeing his “poor” theater through the prism of Antiquity. In order to preserve chronology of events, we should first discuss the “theater of essence” and then the “great synthesis”. However, Brook has been remaining unchanged over the course of years, and his commitment to Ancient and Elizabethan theaters clearly dominates his works.

It wasn't an accident that he undertook the adaptation of *Timon of Athens*. It is almost certain that Shakespeare had never staged that play. Presently, it is also not staged very often. As Shakespeare's almost all other drama plays, it is a viewer-and-actor theater. It makes an impression of an unfinished work because of unexplained plot developments, like in *Julius Caesar*. Shakespeare undertook Antiquity-related topics on several occasions, and he made every effort to accurately depict the background of that time.

Therefore, Brook's adaptation of *Timon of Athens* was a personal challenge to him. He supplemented the Shakespeare's story and swapped the Antiquity for the times of Louis XIV. In 1666, Molière wrote and staged “*The Misanthrope*” on the Versailles court, in a theater venue that was not yet finished at that time. The title character partly resembled the writer himself. Shakespeare was slightly softer on the *Timon of Athens*, even despite the fact that he portrayed him as a misanthrope, just like Molière did approx. 60 years later.

The director avoided Molière because Molière's courtliness did not fit his vision of theater. *Timon of Athens*, as translated into Brook's theatrical language, constituted a full reflection of his viewpoints. He completely abandoned the Artaux Theater to follow the works of Jacques Copeau. The perception of theater is close to Classical understanding, which corresponds to present-day notions of an Antique play. Crude interiors, old stains and fungus on walls, neglected and damaged details all created natural scenery for the play. The interior of the room looks very large, and one can forget about space restricted by walls and the ceiling. Such vision of theater seems to dominate over any other one, which is currently being undermined by “non-theatrical” media. The boundary between what's theatrical and non-theatrical is becoming blurred.

The space of Les Bouffes and the Elizabethan theater are slightly connected, just like the Elizabethan theater remains closely related, in terms of spirit and space, to classical theater. The Les Bouffes du Nord theater building is located in a rundown district of

Paris that is currently occupied by immigrants. The eclectic building doesn't stand out amongst other buildings located *vis a vis* the train line and the metro station. This is not the place for aesthetic experience. But only until you participate in the play. Any play, because every one of them leaves a lasting impression. If the stage adaptation is not the work of the master himself, his spirit will be felt anyway [12].

W. Tatarkiewicz's notion of individual self-learning of aesthetic feelings becomes particularly apparent, and this relates to perception of (not only) theatrical architecture.

REFERENCES

- [1] Braun K. (1984). „Wielka reforma teatru w Europie, ludzie – idee – zdarzenia”, (The Great Theatre Reform, People – Ideas – Events) Zakład Narodowy im. Ossolińskich, Wrocław-Warszawa-Kraków-Gdańsk-Łódź.
- [2] Braun K. (1979). „Druga reforma teatru?”, (The Second Theatre Reform?), Zakład Narodowy im. Ossolińskich, Wrocław.
- [3] Braun K. (1982). „Przestrzeń teatralna”, (The Theatrical Space), PWN, Warszawa.
- [4] Bablet D. (1980). „Rewolucje sceniczne XX wieku”, (Revolutions of Stage Design in the twentieth century), PIW, Warszawa.
- [5] Obracaj P. (2017). „Zmienna przestrzeń teatralna a synergia”, (Multiform Theatre versus Synergy), Budownictwo i Architektura, Politechnika Lubelska, Lublin.
- [6] Obracaj P. (2016). „Teatr elżbietański: rzeczywiste i pochodne formy”, (Elizabethan Theatre: Actual and Derivative Forms), Integracja Sztuki i Techniki w Architekturze i Urbanistyce, Wydawnictwo UTP, Bydgoszcz.
- [7] Korycki K. (12/2013). GDAŃSKI TEATR SZEKSPIROWSKI, (The Shakespeare Theatre in Gdansk), *Architektura Murator* 231.
- [8] Tatarkiewicz W. (1985). „Historia estetyki – estetyka starożytna”, (The History of Aesthetics – Ancient Aesthetics), vol.1, Arkady, Warszawa.
- [9] Tatarkiewicz W. (1989). „Historia estetyki – estetyka średniowiecza”, (The History of Aesthetics – Medieval Aesthetics) Vol.2, Arkady, Warszawa.
- [10] Historia brzydoty, (The History of Ugliness), (2007). redakcja UMBERTO ECO Rebis, Poznań.
- [11] Historia piękna, (The History of Beauty), (2008). redakcja UMBERTO ECO Rebis, Poznań.

- [12] Obracaj P. (2007). "Sztuka teatru a ewolucja architektury scenicznej. Od wzorów ateńskich po światową standaryzację włoskiej sceny barokowej", (The Theatre Art and the Evolution of the Scenic Architecture. From Models of Athens up to the International Standardization of Italian Baroque Stage), Oficyna Wydawnicza Politechniki Opolskiej, Opole.
- [13] Didier Laroche (nov-dec 2010). CONSTRUCTIONS ET RECONSTRUCTIONS A DELPHES AU IV^{es}.av. J-C, (Construction and Reconstruction of Delphes in IVth age BC), *Dossiers d'archeologie* n°342.
- [14] Ziółkowski G.(2000). Teatr bezpośredni Petera Brooka, (The Direct Peter Brook's Theatre), Słowo/obraz, terytoria, Gdańsk.
- [15] Strong J. (2013). Theatre buildings. A design guide. ABTT, London.