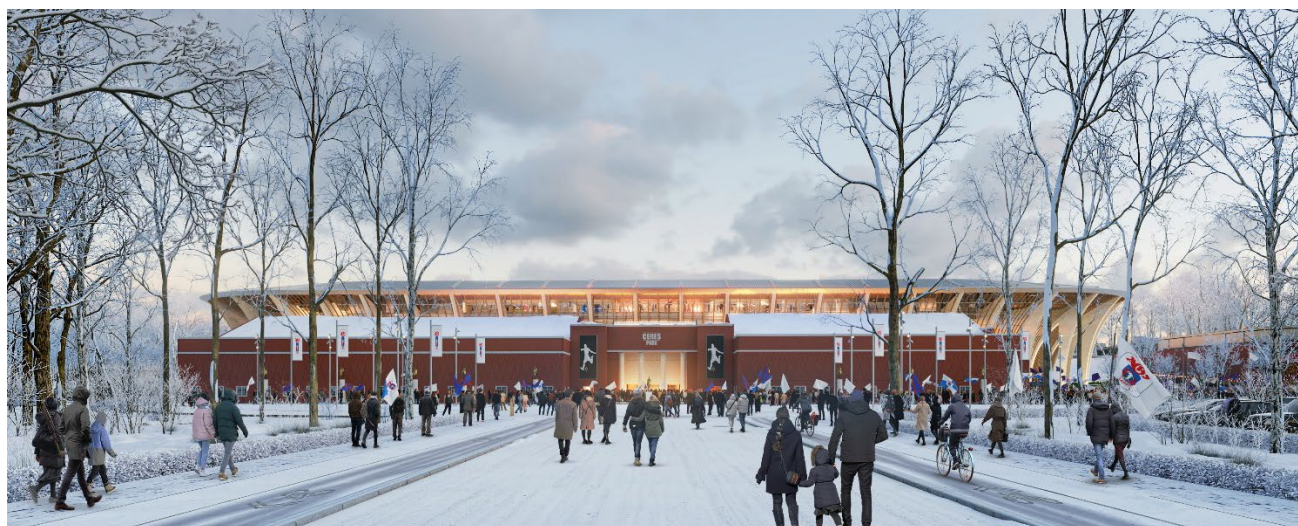


Date  
14 December 2022



**Tender procedure including negotiations**  
**- Full-service consultancy**

# NEW STADIUM IN AARHUS EVALUATION REPORT



## NEW STADIUM IN AARHUS EVALUATION REPORT

Project name **New Stadium in Aarhus**  
Project no. **1100047272**  
Recipient **Tenderers**  
Document type **Report**  
Version **1.0**  
Date **14.12.2022**  
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Description **Evaluation report**

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## 1. INTRODUCTION

This evaluation report accounts for the evaluation of the submitted tenders of the full-service agreement regarding the New Stadium in Aarhus and the decision as to the successful Tenderer in the tender procedure with negotiations on the basis of the preceding design contest.

Following the selection of the three winners of the design contest for a new and ground-breaking football stadium in Aarhus, Denmark, the winners were invited to participate in a tender procedure with negotiations without prior publication pursuant to s. 82 of the Danish Public Procurement Act (*Udbudsloven*). The negotiations have been conducted as parallel negotiations between the contracting entity and the individual winners of the preceding design contest.

It is clear that the Tenderers have put great efforts into the work designing a New Stadium in Aarhus, focusing on quality and functionality, which is reflected in the tender documents submitted and the negotiation procedure. The three tenders have all been thoroughly prepared and are of a very high quality, showing quite exceptional proposals for a new football stadium in Aarhus.

Based on the four evaluation criteria: "Architecture, functionality and technical solutions", "Construction costs and robustness", "Organisation, CVs and process" and "Consulting fee", the contracting entity has thoroughly analysed the three tenders received and has, on that basis, selected the Tenderer offering the most economically advantageous tender evaluated according to the award criterion "Best price/quality ratio", see s. 162(1)(iii) of the Public Procurement Act.

On behalf of the contracting entity, we would like to thank the three tendering teams for their great efforts. We are proud to present the evaluation report and consequently the successful Tenderer in the tender procedure.

### 1.1 Procurement procedure

The tender procedure is conducted based on the preceding design contest for the New Stadium in Aarhus, announced on 29 October 2021 by the Municipality of Aarhus. The design contest was announced by way of tender notice no. 2021/S 211-555956. (the Jury Report of the design contest is attached hereto as an appendix.)

The three winners of the design contest were hereby invited to participate in a negotiated tender procedure without prior publication pursuant to s. 82 of the Public Procurement Act. The tender procedure with negotiations was referred to as the second stage of the two-stage contest.

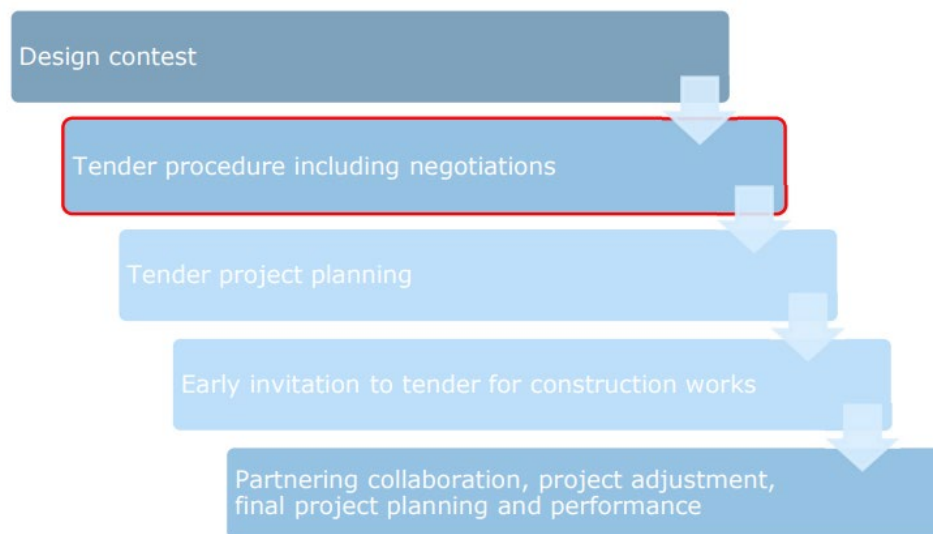


Figure 1: Procurement compliance project process of New Stadium in Aarhus

### 1.2 Negotiation procedure

The tender procedure with negotiations was conducted as parallel negotiations between the contracting entity and the individual winners of the preceding design contest. Dialogue and negotiations were conducted by a negotiation committee assisted by relevant consultants.

The deadline for submitting the preliminary tenders was 16 August 2022 at 12:00 noon. Following receipt of the preliminary tenders and a subsequent tender presentation by all three tendering teams on 22 August 2022, the negotiation committee held the following meetings with the Tenderers:

- Negotiation meeting 1 in the period from 6 to 7 September 2022
- Supplementary meeting on 20 September 2022
- Negotiation meeting 2 in the period from 27 to 28 September 2022

In addition to practical information on the nature of the tender procedure and the negotiation, the agenda of negotiation meeting 1 included a discussion of the below items based on the preliminary tenders:

- *Conformity*
- *Architecture, functionality and technical solutions*

- *Construction costs and robustness*
- *Organisation, CVs and process*
- *Appendix X*

At negotiation meeting 1, all Tenderers had asked to be given the opportunity to conduct an elaborative discussion with the contracting entity's construction cost consultants, Core Five, and consequently a supplementary meeting was planned to take place on 20 September, the subject being "costs", at which the construction costs in relation to the preliminary tenders were discussed. The three "cost" meetings were held virtually and were documented by way of recordings.

At negotiation meeting 2, the agenda was very much to be decided by the Tenderers who were in charge of drafting a more detailed agenda under the item *"Reply to feedback and award criteria"*, and *"Appendix X"*.

The individual negotiation meetings were documented in the form of individual minutes of meetings forwarded to the meeting participants.

After the second negotiation meeting a revised tenders were to be submitted on 18 October 2022 at 12:00 noon. The revised tender was the second and final submitted tender in the procedure.

## 2. EVALUATION FRAMEWORK

### 2.1 Award criterion and evaluation

The contract will be awarded to the Tenderer *offering the most economically advantageous tender* evaluated according to the award criterion "Best price/quality ratio", see s. 162(1)(iii) of the Public Procurement Act.

The below sub-criteria including weighting are used as a basis for awarding the contract:

No.	Sub-criterion	Weighting
1.	Architecture, functionality and technical solutions	35%
2.	Construction costs and robustness	25%
3.	Organisation, CVs and process	20%
4.	Consulting fee	20%

Each Tenderer is given a score on a scale from 0-10 under each sub-criterion. The scores given for each sub-criterion are weighted according to the percentages stated. The sum total of the weighted scores for each individual sub-criterion constitutes the total score, and the contract will then be awarded to the Tenderer having been given the highest score and thus having submitted the most economically advantageous tender.

As for the qualitative sub-criteria 1, 2 and 3, the below rating system is used.

Points	
10	<i>given for the outstanding tenders fulfilling the sub-criterion the best way possible with no or few immaterial exceptions</i>
9	
8	
7	<i>given for tenders with good sub-criterion fulfilment</i>
6	
5	<i>given for tenders with average, satisfactory sub-criterion fulfilment</i>
4	
3	<i>given for tenders with not very satisfactory sub-criterion fulfilment</i>
2	
1	
0	<i>given for tenders which are only just in conformity with contract conditions (but containing no information illustrating any sub-criterion fulfilment)</i>

The score in respect of the individual sub-criterion is given on the basis of an overall evaluation of the Tenderer's fulfilment of the relevant criterion. Down below the focus points are elaborated on which will particularly be weighted positively in the evaluation distributed on the respective sub-criteria.



### **2.1.1 Architecture, functionality and technical solutions (sub-criterion 1)**

Below accounts for the focus points in the evaluation of the sub-criterion.

The criterion is evaluated on the basis of an overall evaluation applying a point scale from 0-10.

When evaluating "Architecture, functionality and technical solutions", importance will be attached to the fact that the offered solution is expressive of a coherent and holistic stadium construction in which connection special weight is attached to the following aspects:

- "New Stadium in Aarhus" appearing as a ground-breaking and beautiful site with international stature and quality.
- That the proposal provides for functional and beautiful coherence between the inside and outside both in respect of landscape and construction design and the exterior and interior of the building – including activation of the façade, particularly as towards Fan Plaza.
- That the proposal relates beautifully to the natural and culture-historical surroundings.
- How the proposal meets the scheduled functional requirements.
- How the proposal meets the designated area requirement.
- That the proposal creates the setting for the perfect fan experience.
- That the proposal is expressive of a convincing sustainability story, respecting the project's defined time schedule.
- That the Tenderer presents convincing technical solutions expressive of a thoroughly prepared integrated design in which architecture, function and technical solutions go hand in hand with a view to creating the optimum project.
- That the Tenderer has chosen technical solutions boosting the buildability of the construction works in light of the project's defined time schedule.
- That the Tenderer has designed the building in such a way that any matters of upkeep and maintenance are optimised the best way possible.
- How the design options meet the functional requirements.
- That design options can be implemented in the general building design without affecting the architectural and technical concept significantly.

### **2.1.2 Construction costs and robustness (sub-criterion 2)**

The below accounts for the focus points in the evaluation of the sub-criterion.

The criterion is evaluated on the basis of an overall evaluation applying a point scale from 0-10, in which case weight is attached to the following aspects:

- That the Tenderer documents robust and realistic construction costs which are as close to the stated financial framework as possible.

- That the Tenderer has chosen project solutions boosting the robustness of the construction works in respect of any future further processing, including technical solutions as well as architectural concept and potentials for savings and adjustments, that do not significantly alter the architectural expression.
- That the costs associated with the design options are as low as possible in case of realisation.

### **2.1.3 Organisation, CVs and process (sub-criterion 3)**

The below accounts for the focus points in the evaluation of the sub-criterion.

The criterion is evaluated on the basis of an overall evaluation applying a point scale from 0-10.

When evaluating "Organisation, CVs and process", importance is attached to the fact that the offered solution is expressive of a well-considered workflow and thoroughly prepared project management as well as a strong and competent full-service consultancy team focused on the task in which connection special weight is attached to the following aspects:

- That an organisation is set up including clear and logical skills and responsibilities, and where the persons responsible for the various expert areas have been chosen in such a way that their skills are used for solving the specific task at hand.
- That the Tenderer's project organisation expresses convincing cooperation both internally and externally – including clear communication lines as well as correlation between meeting attendance and decision-making powers to ensure progress.
- That the organisation is robust providing for internal knowledge sharing, eliminating bottlenecks and absence (if any).
- That the organisation is multidisciplinary with a large base of support available of relevant high-level specialists.
- That the project manager and head(s) have documented management and cooperation experience, including in particular experience with complex projects and partnering/joint project planning.
- That key persons, particularly head of project planning/project manager and construction manager, are able to document extensive experience with similar construction works.
- That relevant areas of expertise are covered by experts at a high professional level.
- That the Tenderer demonstrates a good overview of the project, the workflow and the special focus areas – including how the Tenderer decides to specifically approach the task within the framework in terms of time, procedure and cooperation determined in the contract documents.
- That the Tenderer demonstrates to have good understanding of and insight into the partnering cooperation and the workflow proposed and shows willingness and ability to be a considerable contributor to the value-adding cooperation with the Contracting Entity, contractor and other players.

- That the Tenderer demonstrates methods, tools and procedures ensuring consistent quality, time, costs and risk management during the entire course of the project.
- That the Tenderer convincingly accounts for the way in which it assures good quality management, monitoring of project progress and supervision of the project.

The Tenderer's tender must obtain a score of minimum 5 points on the sub-criterion "Organisation, CVs and process" in order to proceed in the evaluation. If a score of minimum 5 points is not obtained on this sub-criterion, the tender is thus deemed to be non-compliant.

#### **2.1.4 Consulting fee (sub-criterion 4)**

The below accounts for the focus points in the evaluation of the sub-criterion.

##### **Evaluation method:**

When evaluating the sub-criterion "consulting fee", the Contracting Entity will attach importance to the following aspects:

- Fee percentage (70%)
- Hourly rates (30%)

The sub-criterion "consulting fee" is evaluated based on mathematical models including a point scale from 0-10, whereby each of the two price elements, the total fee percentage and hourly rates, respectively, is evaluated separately.

In all models, calculations are made using two decimals. When converting to the criterion's relative weighting, calculations are also made using two decimals.

##### **As for fee percentage:**

The evaluation of the fee percentage is weighted by 70% in proportion to the total score for the sub-criterion "consulting fee".

##### Primary model for evaluation of fee percentage:

When evaluating the fee percentage, a linear score model is used applying a point scale from 0-10, whereby the tender which is only just financially acceptable is awarded the score 0, whereas the best imaginable price in proportion to the task for which tenders were invited is awarded the score 10.

The individual tenders are awarded points according to a linear interpolation between these two extreme points.

The best imaginable price is defined as the lowest compliant price offered, whereas the just financially acceptable tender is a tender which is 30% more expensive than the lowest compliant price offered.

The said price span has been determined on the basis of the expected price level for the work for which tenders are invited.

##### Secondary model for evaluation of fee percentage:

If one or more tenders have a tender price which is more than 30% higher than the tender with the lowest tender price, the span will be increased by 5% intervals until all tender prices may

be contained in the score model. The span will, however, not be increased by more than 100%. Tenders having a tender price which is more than 100% higher than the tender with the lowest tender price will not be taken into consideration.

#### **As for hourly rates:**

The evaluation of the hourly rates is weighted by 30% in proportion to the total score for the sub-criterion "consulting fee" based on the following:

The hourly rates offered within the individual staff categories (see the price schedule) will be evaluated separately according to the following model:

The Tenderer having submitted a compliant tender and offering the lowest price for the staff category in question is awarded the maximum score (10 points).

##### Primary model for evaluation of hourly rates:

Any price in the staff category in question which is 50% more expensive than the compliant tender with the lowest price in the staff category in question is awarded 0 points.

The tenders not offering the lowest price are awarded points on the basis of linear interpolation between the two extreme points (0 and 10) based on the individual tender's percentage deviation from the lowest price according to the following formula:

$$\text{Points} = \text{Max. points} - \frac{\text{tender price} - \text{lowest price}}{\text{lowest price} \times 5} \times 100$$

##### Secondary model for evaluation of hourly rates:

If the price spread in the tenders received is higher than the span in the primary model above allows for – i.e. if the prices in the tender with the highest price are more than 50% higher than the price in the tender with the lowest price – the span will be increased by intervals of 5 percentage points (55%, 60%, etc.) until all the prices stated may be contained within the evaluation model.

The awarded number of points in respect of the specific hourly rate are multiplied by the weighting appearing for the specific hourly rate in the price schedule and are then added to a total score for the hourly rates submitted.

## **2.2 Evaluation participants**

The tenders submitted will be evaluated by a jury consisting of the following members:

##### Jury:

Jacob Bundsgaard, Mayor, the Municipality of Aarhus (chairman)

Metin Lindved Ayden, Council member, Culture and Public Services

Nicolaj Bang, Council member, Technology and Environment

Jens Bjerg Sørensen, chairman of the board of directors of Salling Fondene

Henrik Lind, CEO of Lind Invest

Christian Budde, member of political following group

Mette Bjerre, member of political following group

Anne Mette Boye, Municipal architect, Municipality of Aarhus

Trine Berthold, Project Manager of New Stadium in Aarhus, the Secretariat of Kongelunden

Bjarne Hammer, Architect and member of the Danish Association of Architects, specialist juror

Martin Krogh, Architect and member of the Danish Association of Architects, specialist juror

Consultants to the jury:

Søren Bitsch Christensen, keeper of the archives of the city of Aarhus  
Charlotte Storm Gregersen, Director of Culture and Public Services  
Heidi F. Holch, Administrative Director of Sport and Leisure  
Henrik Seiding, Director of Technology and Environment  
Luise Pape Rydahl, Administrative Director of Technology and Environment  
Hardy Pedersen, Project Director, the Secretariat of Kongelunden  
Lars Fournais, chairman of the board of directors of AGF  
Jacob Nielsen, CEO of AGF  
Lars Peder Pedersen, Rambøll, client consultant for the Secretariat of Kongelunden

Additional consultancy services:

Other consultants have continuously been attached to the project from Employer's consultant, the Secretariat of Kongelunden, other administrations, clubs and external experts. This has contributed to clarifying specific topics within, among other things, cultural environment, engineering, construction costs and international stadium expertise.

### **2.3 Evaluation procedure**

The final evaluation took place by way of jury discussions at an evaluation meeting.

Prior to the evaluation meeting, the jury had received a thoroughly prepared written evaluation presentation from the Secretariat of Kongelunden, affiliated consultants and architectural specialist judges, including accounts of evaluation and proposed scoring based on comprehensive, detailed, professional scrutiny of the overall tender documents.

At the end of the meeting, a unanimous jury agreed on an obvious winner of the tender procedure and recommended that the political steering group of Kongelunden declare the said Tenderer as the final winner of the tender procedure.

At a subsequent meeting of the political steering group, the said recommendation was unanimously approved.

## 3. CONFORMITY

### 3.1 Submitted tenders

In due time within the deadline laid down in the specifications to Tenderers, i.e. 18 October 2022, at 12:00 noon, the Employer received revised tenders from the following Tenderers:

- **Cobe**  
AFL Architects  
Buro Happold (DK)  
Turner & Townsend
  
- **Zaha Hadid Limited**  
Tredje Natur ApS  
Sweco Danmark A/S
  
- **Dorte Mandrup**  
Kristine Jensen Landskab & Arkitektur  
Schlaich Bergermann Partner  
Søren Jensen Rådgivende Ingeniørfirma  
AGN - Niederberghaus & Partner  
Birkmose Consulting

The Employer did not receive any tenders following expiry of the deadline for submission, and no tenders are thus excluded from being considered against this background.

### 3.2 Conclusion about conformity

Following a careful review by the contracting entity's legal advisers, Bech-Bruun, all three tenders are found to be in conformity with contract conditions and admitted for evaluation. The evaluation appears from the below paragraphs.

## 4. EVALUATION OF COBE'S TENDER

*TEAM: Cobe, AFL Architects, Buro Happold, Turner & Townsend*

### 4.1 Summary

As a whole, the tender is thoroughly prepared and convincing. The suggested design appears sympathetic with a good and respectful reading of the place and its surroundings. The proposal is highly expressive of an integrated design process in which architecture, function and technical solutions form a synthesis. In terms of function, the proposal is assessed to have solved the stadium design really well.

The proposal is assessed to be based on the financial framework and manages, with good conviction, to base design and functionality on buildable, rational technical solutions, combined with a good deal of robustness.

The presented organisation is assessed as good and competent with particularly good understanding of the planned partnering process. In addition, the fee is evaluated as outstanding and within the expected margin for the performance of the work.



#### 4.2 Architecture, functionality and technical solutions (sub-criterion 1)

Cobe's proposal appears as a stylish stadium with a sympathetic architectural simplicity. Seen from Stadion Allé, the new stadium behind Høgh-Hansen's building is experienced as a "discreet player interacting with the unified whole", greatly respecting the historical architecture. The project is inspired by rhythm and a choice of colours from the historical architecture as well as the surrounding nature. Particularly at night and at dusk, the proposal will appear iconic. The best way to experience this is when arriving at the Heritage buildings (*Stadionhallerne*) and watching the building from, for example, the Fan Plaza or the new passage between Høgh-Hansen's building and the new stadium. It is considered a challenge that the character of the building will not show until guests move around the stadium. The project is assessed to a higher extent to be contextually adapted than to appear iconic and ground-breaking in its processing.



##### 4.2.1 Coherence between the inside and the outside

The façade is divided into three with an upper closed part, an open centre and a lower transparent glass façade opening up to its surroundings. The placing of the façade "shells"/projection creates an arcade all around the building and forms a good passage between the outside and the inside. The processing of the façade downscales the scale of the facility and creates a good connection to the Fan Plaza. This light and flapped stadium façade finds inspiration in the flickering of the forest and the structure of the cones, which creates a nicely filtered light inside the concourse and a special feeling of standing beneath the treetops of the forest. This is furthermore supported by the varying location and perforation of the façade plates, which are controlled based on the orientation of the building and may thus result in varying moods inside the concourse. The façade may be orchestrated by way of artificial lighting and graphics for finding one's way. The orchestration of the façade seems static and is in need of focus on creating more variation by way of, for example, a digital setting which may be adapted to various events. In addition, concerns exist as to how the building appears without lighting, whether the plates become too thin in their manifestation, how the supports for the façade plates actually look and whether the building appears too characteristic of its time without the required ground-breaking stature and quality.

A red exterior has been adapted to outward appearances, and a white interior in the bowl as well as the concourse creates a white canvas. This is considered a simple and consistent expression.

In the project, the landscape is suggested to be an active "clearing in the forest of Kongelunden", and a string of urban spaces is created. The project is located in the existing terrain, the building



pressing up against the landscape, but also establishing a connection 360 degrees around the stadium. Around the stadium, a green and somewhat informal feeling is created, and the landscape is flexibly programmed according to which functional zone must be supported. The landscape has been nicely processed and includes good suggestions of squares and a variation of programmes around the stadium. The Fan Plaza is flexible and well-functioning, including non-match day activation, strengthening the spatial relation in the area. Towards the south, a nice and well-functioning access is established to the racecourse of Jydsk Væddeløbsbane via a slope naturally following the terrain. The outer row of stadium columns breaks the flow in two, and a very narrow gap is created between the outer row of columns and the racecourse of Jydsk Væddeløbsbane towards the south-west, which is considered problematic.

#### 4.2.2 Cultural environment

The project clearly addresses the environment relating to cultural history, whereby the cultural history of the area and nature have been powerful points of departure for the design of the proposal. In many ways, a beautiful proposal has been made with a very clear reference particularly to the historical building. The reference to and the interaction with nature are experienced as clever and with much potential – also including a vision of a spectacular renewal of the area in front of the main building with paving stone and historical statues. The project extends the distinctive axis from city to stadium through the historical main building and all the way into the new stadium with the ball as the final end point. That is a good idea and a powerful feature.

In addition, the choice of colours of the project – red-white – derives from the cultural environment and colours from the fading forest to ensure coherence between new and old. At floor plan, the building has been shaped as a super ellipse, curving all the way around, and thus works with high geometrical contrast to the historical weight. A good dialogue between 'new and old' is demonstrated in the new intimate "space" created in the project between Høgh-Hansen's building and the stadium. The relation between new and old is somewhat blurred, particularly seen from Stadion Allé, where it can be hard to experience how new and old together constitute a strong unified whole.



#### 4.2.3 Functionality

It is a very thoroughly processed and detailed project providing a qualified proposal as to a football stadium which fulfil the scheduled functional requirements really well.

The design of the stadium bowl is based on functional stadium-technical solutions, creating a good, intense and intimate stadium experience. The roof incline and location result in an intimate stadium experience. The main stand, however, appears massive and as a wall seen from the inside of the stadium partly because of the closed corners and partly because there is no connection between levels 2 and 3 of the stand.

The main stand has been organised well with a good flow, a well-functioning VIP lobby towards the Fan Plaza, a good visual connection between the levels, panoramic views over the field of play from both silver and gold levels. There is also a good visual connection to the Fan Plaza from the VIP levels and a view over Stadion Allé from level 4. The Tunnel Club seems more like a lobby than an actual VIP lounge. On the other hand, it is spectacular that spectators may catch a sight of the pitch all the way from the Heritage Building (*Søjlehallen*) via the Tunnel Club. Focus has been on creating the highest possible flexibility in the floor plan, but concerns exist as to whether the VIP areas in front of offices at level 1 and in front of cores at gold level (level 3) are too narrow, and the proposal is short of an option to establish VIP lounges at gold level.

The concourse is functional with its column-free design, good functionality, good flow and openness to the surroundings. The upper levels work good and may also be activated, and they connect very good with the fan bar. An optimum setting has also been created for the façade towards the concourse – here there are no closed walls. The differences of height are absorbed by way of ramps, which is considered fully functional.





#### 4.2.4 Areas

The area of the proposal is close to the directed area in the competition brief, which is weighted positive in the evaluation.

#### 4.2.5 Experience by fans

The project to a material degree provides the setting for a first-rate fan experience both inside and outside. The proposal suggests an architecture which, among other things, in the Main Stand constitutes a modern interpretation of a "Scandinavian atmosphere". Inside the stadium, the architecture works as a steady background, underpinning an intense and intimate stadium experience. The concourse contributes to activating the landscape and the urban open space around the stadium, working both in everyday life and supporting a stadium which is a magnet on event and match days. The concourse provides many different options for use both on weekdays and on match days. The spaces will be established as white and blue canvas, allowing fans to display their affection and develop the orchestration of the concourse over time. The design of the concourse area seems in a way to create a too informal "street space".



#### 4.2.6 Sustainability

The Tenderer presents a thorough and analytical approach to sustainability and, generally, the proposal is assessed to present a convincing sustainability story within the project framework, particularly focusing on the great reuse potential in the existing building and accounting for a realistic approach to LCA calculation.

#### **4.2.7 Technical solutions, integrated design and buildability**

The project has been created, nicely balancing architecture, functionality, technical solutions and buildability and with focus on the intimate stadium experience. The project demonstrates a convincing holistic and integrated design work whereby the technical disciplines and the architecture support each other.

Generally, the Tenderer has succeeded in making a thorough proposal which clearly shows the result of an integrated design process where particularly the load-bearing structures, the roof and façade are impressive when considering form, function and financial framework. The proposal also appears to be well-considered in respect of acoustics which, despite minor confusion as to concepts, meet the requirements of the design contest programme perfectly and, consequently, the overall comfort and performance of the proposal as to microclimate are assessed to be above average.

Technical solutions have generally been chosen which boost the buildability of the proposal within the timewise and financial framework. The façade solution is, however, assessed to contain a great deal of varying steel joints by virtue of the many individually placed façade plates which, in combination with the oval form of the façade, may be a constraining factor in relation to buildability and a very special attention point considering the financial and timewise framework. The aluminium plates must in this respect be supported by a quite comprehensive, secondary load-bearing steel construction visible from below which is assessed to some extent to reduce the architectural value.

The bowl and the main stand are constructed by way of traditional and well-known solutions, and the proposal includes a simple and inexpensive roof construction of steel trapezoidal sheets. The roof construction has been optimised in respect of price and buildability. The load-bearing main construction consists of a simple two-dimensional column-beam construction which is rationally buildable. All parts are prefabricated, and mounting may take place swiftly and directly of the individual components without any extraordinary interim supports.

The façade is the largest uncertain factor of the project. It is relatively simple from a technical point of view, but it contains, as mentioned, many part elements and joints and also constitutes an untested construction both in terms of construction work and operation without any known, comparable reference buildings. The oval form also increases the degree of complexity.

The Tenderer has – in terms of landscape design - drafted a very inexpensive and optimised layout focusing on construction economics. The surfacing is gravel, and the terrain profile increases together with the existing terrain from elevation point 14.75 to elevation point 18, which minimizes the difference of height to the racecourse Jydsk Væddeløbsbane and thus only requires prefabricated retaining wall elements against it.

In terms of installation, the proposal is assessed as generally rational and with known buildable solutions.

#### **4.2.8 Upkeep and maintenance**

In terms of operation and maintenance, the proposal is assessed as generally rational, however, with a certain uncertainty as to the need for any frequent cleaning of the façade plates, both internally and externally – including inconvenient stopovers of birds. The frequently used clear, white colour on the surfaces will be exposed to running marks after cleaning and normal wear and tear. In addition, the assessment is that the exterior gravel surfacing risks resulting in unreasonably high wear and tear on interior floor surfaces as well as higher cleaning expenses.



#### 4.2.9 Design options

The Tenderer complies with the functional design option requirements and implements these quite well in the general building construction without affecting the architectural and technical concept considerably. However, option 6 (event egress) is assessed not to have been solved satisfactorily, which affects the evaluation in a negative way.

Overall, the tender is evaluated to fulfil sub-criterion 1 good and is therefore awarded 7 points.



#### 4.3 Construction costs and robustness (sub-criterion 2)

The Tenderer has estimated the capital sum at approx. DKK 600m for the present proposal. It is noted that the capital sum exceeds the financial framework to a minor degree, which affects the evaluation in a negative way.

The capital sum is assessed as predominantly robust and realistic, and it is assessed to be predominantly likely that the project will to a minor degree exceed the project's financial framework if it is carried into effect in its present form.

In many ways, the proposal is generally optimised perfectly in terms of price, and the assessment is that not much cost-cutting potential is left under the requirements of the contract documents.

Generally, the proposal is assessed to be predominantly robust for further processing with good, buildable solutions and a strong architectural concept – however, some concern exists as to the constraining factor in the development of the façade in terms of savings and realignment. The greatest challenges are risks in the steel façade combined with the project's high architectural dependence on the façade, and as well as the assumption of the high volume of reusable material from the existing building.

The estimated costs incidental to the design options are assessed to be satisfactory.

Overall, the tender is evaluated to fulfil sub-criterion 2 good and is therefore awarded 7 points.

#### **4.4 Organisation, CVs and process (sub-criterion 3)**

The Tenderer offers several experienced and competent consultants with good CVs, the expertise and skills stated being targeted the relevant roles. In general, the organisation shows clear and logical skills and responsibilities, the persons responsible for the various expert areas having been chosen in such a way that their skills are used for solving the specific task at hand.

The internal organisation of the engineers is, however, assessed to be partially illogical since an informal management level has been inserted under Head Engineer without any obvious purpose, which has a blurring effect on communication lines and areas of responsibilities.

At a general level, the Tenderer presents a good and convincing cooperation in its internal project organisation, including clear internal management support. Clear external communication lines are also presented with Cobe at the forefront, assuming responsibility for the overall coordination of the team externally, which is considered positive in the evaluation.

The offered organisation of engineers is assessed only to a minor extent to be robust for the demanding, intensive collaborative processes with the main contractor in project development and to have the ability to be able to combine relevant specialists with insight into Danish construction methods with guaranteed efficient correlation between meeting attendance and decision-making powers as requested.

The project organisation is generally assessed to be robust in terms of guaranteeing internal knowledge sharing and eliminating any absence, and a convincing coherence is presented in staffing throughout the various project phases to ensure minimum knowledge loss.

Generally, the organisation appears to be multidisciplinary and, in addition to the CVs provided, several resources are described to be available to the project. As for the engineering disciplines, the organisation is, however, assessed to only a minor extent to be multidisciplinary with a large support base available of relevant high-level specialists.

The offered project manager and head(s) convincingly display experience with complex projects. However, no convincing degree of experience is displayed with comparable reference projects of such proportion.

Generally, the key persons are assessed only to some extent to be able to document experience with similar construction works. Head of project planning/project manager and construction manager are assessed to have a solid basis of experience, but not any convincing experience with large, complex projects which to a sufficient degree may be compared to the New Stadium in Aarhus, which affects the evaluation in a negative way.

It is assessed that the Tenderer presents subject specialists of a great highly professional level, including in particular in respect of stadium expertise.

In the description, the Tenderer demonstrates a good overview of the project and the workflow. The Tenderer points out specific focus areas and clearly renders visible how such areas will be acted on across disciplines for the entire project duration.

Particularly good understanding of the partnering process and the cooperation form is displayed, which is convincingly supported by the fact that several of the consultants in the offered team are experienced in partnering from previous projects. Strong focus is on creating a good process and a good and value-creating cooperation between the parties involved, which has a considerable positive effect on the evaluation.

At a general level, methods, tools and procedures are demonstrated which must ensure a uniform quality, focus on time management, costs and risk management for the entire project duration. Several specific initiatives are demonstrated in respect of, among other things, meetings and meeting structure the purpose of which is to ensure alignment of the work and that focus areas pointed out are illustrated and handled. At a general level, a satisfactory account is given as to how the project is monitored by way of supervision and monitoring of project progress.

Overall, the tender is evaluated to fulfil sub-criterion 3 good and is therefore awarded 7 points.

#### **4.5 Consulting fee (sub-criterion 4)**

The Tenderer has offered 13.1% in consulting fee. The fee quote is assessed within the expected margin for the performance of the work.

The fee quote as well as the hourly rates are the lowest in the tender procedure which, according to the evaluation model, results in 10 points.

#### 4.6 Total points

Overall, the Cobe Team is awarded 7.60 points as the final score of the tender, which results in a second place.

			COBE	
No.	Sub-criterion	Weight	Points weighted	Points 0-10
1.	Architecture, functionality and technical solutions	35%	2.45	7
2.	Construction costs and robustness	25%	1.75	7
3.	Organisation, CVs and process	20%	1.40	7
4.	Consulting fee	20%	2.00	10.00
Final score		100%	7.60	



## 5. EVALUATION OF ZAHA HADID'S TENDER

*TEAM: Zaha Hadid Limited, Tredje Natur ApS, Sweco Danmark A/S*

### 5.1 Summary

As a whole, the tender is extremely thoroughly prepared and convincing. The proposal is particularly strong, simple and robust, and the poetic and iconic building section creates an impressive adaptation to the location. The strong manifestation of the section creates an iconically impressive proposal focusing on the perception of the areas surrounding the stadium and, in terms of function, the proposal is assessed to have solved the stadium design particularly well.

The proposal appears impressively strong in its integrated design where rational and buildable technical solutions go hand in hand with a beautiful and convincing architectural expression. The proposal appears very robust and based on the financial framework.

The presented organisation is evaluated as brilliant and with a particularly competent team and a very good understanding of the future process. In addition, the fee is evaluated as good and within the expected margin for the performance of the work.



## 5.2 Architecture, functionality and technical solutions (sub-criterion 1)

The proposal has a unique and strong main concept with special iconic lines taking as their point of departure the trees in the forest. The façade has an imposing arched movement which is perceived as compelling already from afar - from Stadion Allé. From there, the building appears to be a shining volume in the axis in relation to the trees in the forest and the verticality of the Heritage Building (*Søjlehallen*). Thus, a special place is created and a good relation to the Høgh-Hansen building. Consequently, the project both looks back, but also looks ahead as a new typology for Aarhus. It seems credible and true and is also a robust concept. The strong manifestation of the project invites and reaches out to the surroundings and matches the location. The proposal is also so significant and iconic that it will be remembered as a special stadium for Aarhus.

The project is assessed as being very ground-breaking, beautiful and iconic.



### 5.2.1 Coherence between the inside and the outside

The special character of the project is created by the distinctive cross section. Concrete and wood are close partners and form a beautiful and functional interior, but also a compelling outside with an almost Olympic dignity. At level, the stadium curves outwards, but sectionally it is concave and, via the encircling row of columns at the edge of the building, guests and surrounding are clearly and friendly welcomed to this special place, creating a perfect dwelling zone around the stadium. This results in a well-functioning openness and passage between the outside and the inside, particularly conveyed towards the Fan Plaza.

The rhythm of the constructive columns seems convincing and outlines the concept, just like a house in its full extent growing into the sky. In between the columns, vertical lamellae are installed at varying distances. The distance between the lamellae is decided by the building alignment against wind and sun and thus creates varied openness and the possibility of various moods inside the concourse. As the main section, the façade concept is flexible, simple and robust. The materials used contribute to underlining an elegant architecture. The proposal is, however, short of a further processing of the proportions and distances of the lamellae in order to ensure the decoding of the



concept of the proposal. The façade may be orchestrated scenographically both on the outside and the inside via digital lighting, colour scheme and graphics. In the concourse, a special break room and arrival hall will be created with lamellae which are not only defined by the lower side of the stands but have a relation to the façade in terms of material.

The landscape concept introduces a "natural clearing in the forest". The existing landscape is adjusted and laid out to the effect that access to the concourse is ensured from the same level which creates a well-functioning flow at the same level both inside and outside and connects the building seamlessly with its surroundings. This creates a distinct passage to the racecourse Jydsk Væddeløbsbane, a terrain jump which is terraced and covered with plants. The landscape towards the south is worked up quite well with access to the racecourse Jydsk Væddeløbsbane via a slope naturally following the terrain. The landscape follows the lines from the curves of the stadium roof and draws a grid in an almost classical order, creating a transition from the forest to the building covering and into the building. The landscape has been nicely processed and includes very good suggestions of squares and a variation of programmes around the stadium. The Fan Plaza is flexible and well-functioning, including non-match day activation, strengthening the spatial relation in the area.

### 5.2.2 Cultural environment

The project operates with an elegant contrast to the existing buildings both in respect of the mode of expression and materials. The contrast contributes to illustrating the history of the place, and the characteristic cross section of the stadium creates a space all the way around the building ensuring visual, functional and aesthetic relations to the historical buildings and the beautiful forest. The reference to and the interaction with nature are experienced as clever and with much potential – also including a spectacular renewal of the area in front of the main building. The contrast contributes to creating a productive dialogue between new and old, and the adaptation does not only imitate the existing building but makes the historical building better and more distinct. Towards the Heritage buildings, an impressive passage is created.

Seen from Stadion Allé, the characteristic, new architecture forms a beautiful background to the historical main building, and the colour contrast illustrates history and the relation between the buildings. New and old are beautifully and boldly intertwined, and the cultural environment values are very elegantly integrated in this inviting and unifying project.



### 5.2.3 Functionality

The project is extremely thoroughly prepared and detailed providing a fascinating proposal for a new stadium which fulfil the scheduled functional requirements brilliantly.

The design of the stadium bowl is based on convincing and functional stadium-technical solutions, creating a good, intense and intimate stadium experience. The main stand is stylish and naturally integrated in the bowl design, and a good coherence has been created on the VIP stand. The roof is divided into two parts with an outer translucent roof resulting in a generous influx of daylight on the field.

The main stand is organised extremely well with a well-functioning flow, a good visual connection between levels, a convincing panoramic view to the field of play from both silver and gold levels as well as a very good coherence to the Fan Plaza and the rest of the area. All levels overlook the surroundings via open corners towards the NW and NE, and level 4 overlooks Stadion Allé. Focus has been on creating the highest possible flexibility in the layout of levels, including a well-functioning gold level with integrated flexibility in respect of the potential establishment of VIP lounges and variation in zones/spaces. Accommodation of the spaces with many wooden lamellae surfaces relates to the outer façade of the stadium but seems laboured in the design here and there. A more Scandinavian atmosphere inside the main stand is requested.

The concourse is functional with its column-free design, good functionality, good flow and openness to the surroundings. The concourse is level all the way around, and the form is emphasised particularly impressively with the lower side being covered by lamellae in either wood or metal in which case the metal particularly accommodates the rough handling in the ultra and away fan zones, respectively.



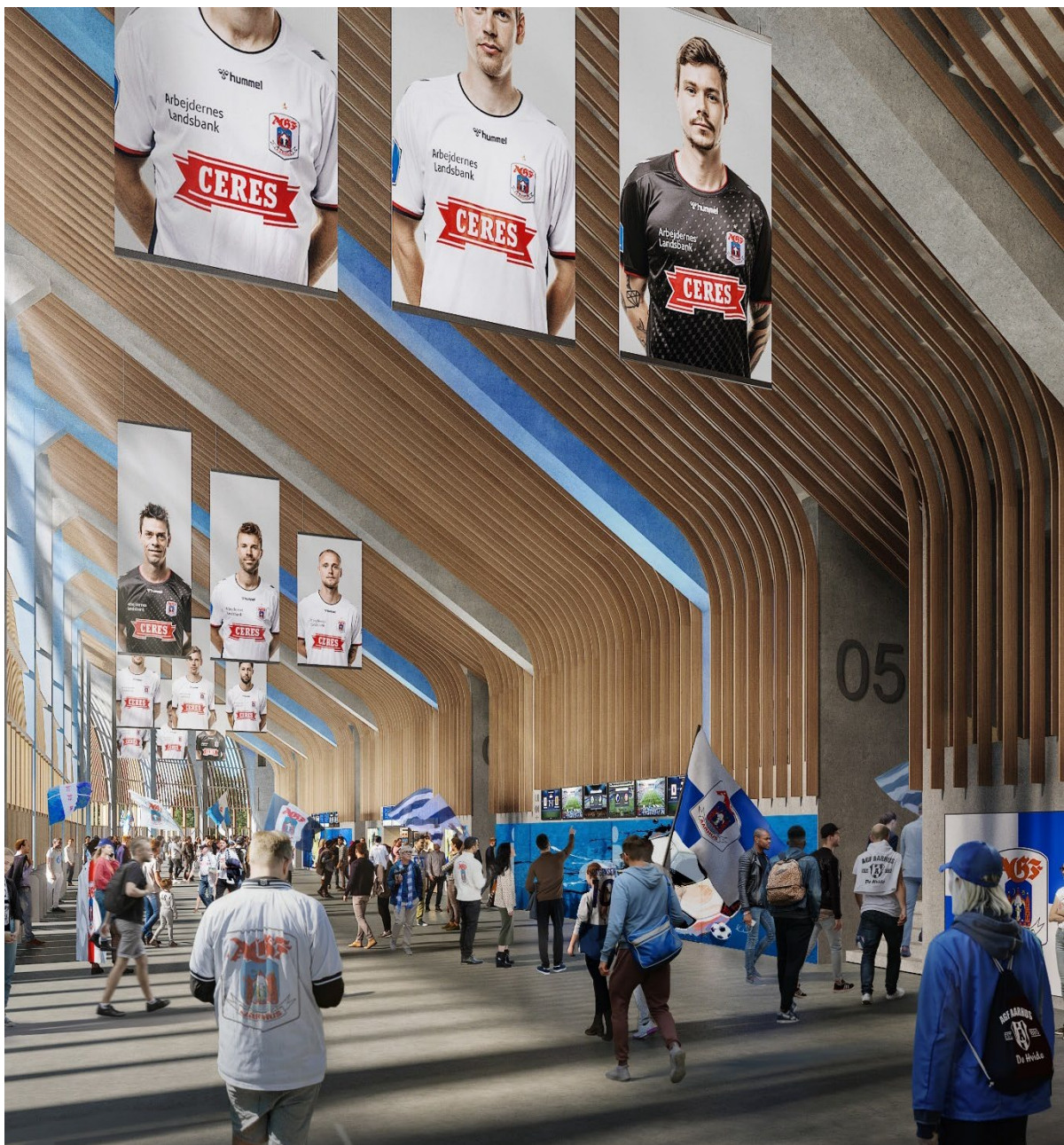


#### 5.2.4 Areas

The area of the proposal is close to the directed area in the competition brief, which affects the evaluation in a positive way.

#### 5.2.5 Experience by fans

The project to a material degree provides the setting for a first-rate fan experience both inside and outside. The proposal shows architecture which is both international and Scandinavian in its manifestation. In addition, the player tunnel and the setting of concourse provide the framework for a special fan experience with many potential applications both on weekdays and on match days. The concourse contributes to activating the landscape and the urban open space around the stadium, working both in everyday life and supporting a stadium which is a magnet on event and match days. Inside the stadium, the architecture works as a steady background, underpinning an intense and intimate stadium experience.



### **5.2.6 Sustainability**

The Tenderer presents an in-depth, holistic approach to the sustainability story of the project, handling many different aspects within the framework stated for the project, including specific measures as to biodiversity and social sustainability.

In addition to proposals for reuse of parts from the existing stadium, the recycling strategy also embraces the proposed reuse of the existing sand cushion as well as crushed concrete, which is a positive feature in relation to the overall resource consumption, just as, among other things, the selection of wood for the façade contributes to a relatively low CO<sub>2</sub> footprint.

### **5.2.7 Technical solutions, integrated design and buildability**

With great conviction, the project has based a beautiful design on good functional, buildable and rational technical solutions and thus demonstrates a convincing, holistic work with integrated design whereby technical disciplines and the architectural concept support each other impressively.

The project clearly shows the outcome of a thought-through integrated design process whereby particularly load-bearing constructions, roof and façade have been worked out very convincingly and with great focus on buildability and simplicity in general. In addition, the proposal is good and well-considered in relation to acoustics.

It is considered a negative feature, however, that the proposal shows a relatively open façade in the concourse, consisting of wooden lamellae, which does not sufficiently ensure a good indoor environment in the concourse. In the tender, a detailed account is, however, given as to how the lamellae structure may be adjusted relatively easy by way of parametric design. Similarly, it has a negative effect on the evaluation that the form of the façade is assessed to imply a risk of landscape areas close to the building being exposed to wind.

The bowl and the main stand are constructed by way of traditional and well-known solutions, and the proposal includes a simple and inexpensive roof construction of steel trapezoidal sheets and PTFE canvas. The roof construction has been optimised in respect of price and buildability. The roof is relatively large due to the large projection. The load-bearing main construction consists of a two-dimensional column-beam construction which is very rational and buildable. All parts are prefabricated and mounting of the individual components may take place directly, which has been convincingly documented in the project documents. The proposal includes a very high repetition effect in the main construction by using only two fundamental concrete column types, just as the majority of the steel beams are identical since the stadium has completely straight sides. The concrete columns are extremely heavy and will require special transportation. The Tenderer has verified that this is an option. The use of steel has been minimized by using steel grid trusses rather than massive steel girders.

The façade is a simple wooden lamellae construction with high flexibility in its construction. The lower part has been shown with perforated steel plates.

In terms of installation, the proposal is generally assessed as rational and with known buildable solutions.

A relatively exclusive and expensive landscape design has been suggested. The surfacing is solid and consists partly of concrete and partly of asphalt with a high degree of detail. The terrain profile all the way around the building constitutes an elevation point of 14.73, which results in a higher excavation volume and a need for a pile wall towards the racecourse Jydsk Væddeløbsbane.



### 5.2.8 Upkeep and maintenance

The proposal is generally assessed as being very rational in terms of operation and maintenance, resulting in minimum operating costs. It is considered a very positive in the evaluation that the façade wood used is maintenance-free and also protected by roof projections. However, a risk is assessed to exist for birds posing an inconvenience to the concourse and a need for routine removal of algae from the inner transparent edge of the roof.

### 5.2.9 Design options

The Tenderer complies with the functional design option requirements and implements these quite well in the general building construction without affecting the architectural and technical concept considerably.

Overall, the tender is evaluated to fulfil sub-criterion 1 brilliantly and is therefore awarded 9 points.



### 5.3 Construction costs and robustness (sub-criterion 2)

The Tenderer has estimated the capital sum at approx. DKK 591m for the present proposal. It is noted that the capital sum exceeds the financial framework to a minor degree, which affects the evaluation in a negative way.

The capital sum is assessed as only to some extent robust and realistic, and it is assessed to be predominantly likely that the amount will exceed the project's financial framework if it is carried into effect in its present form.

The proposal is, however, assessed to be very robust in connection with any future further development, both in respect of the particularly buildable technical solutions and a convincingly robust architectural concept, which is assessed to allow in a good way the implementation of potentials for savings and adjustments in the project solution.

The greatest challenges are the risks in connection with the large concrete columns as well as the further development of the wooden lamellae in the façade. It is assessed that both challenges may be processed in a very simple way and satisfactorily within the suggested architectural concept, which has also been well accounted for in the tender.

The estimated costs incidental to the design options are assessed to be satisfactory.

Overall, the tender is evaluated to fulfil sub-criterion 2 good and is therefore awarded 7 points.

#### **5.4 Organisation, CVs and process (sub-criterion 3)**

The Tenderer offers some very experienced consultants with convincing CVs, the expertise and skills stated being to a particularly high degree targeted the relevant roles. The organisation shows generally clear and logical skills and responsibilities, where the persons responsible for the various expert areas have been chosen in such a way that their skills are to a convincing degree used for solving the specific task at hand.

The organisation appears extremely well-considered both internally and externally, focusing greatly on guaranteeing a good and convincing cooperation. Short communication lines are emphasised between the Employer and the local team and at the same time full decision-making powers are present, which has a considerable positive effect on the evaluation. In addition, it is considered a positive feature that the team at company level, across disciplines and in pairs is able to document previous cooperation experience.

The organisation is generally assessed to be particularly robust and well-dimensioned for the task, and the organisation is to a prevalent degree characterised by "double staffing" whereby Zaha Hadid's team as well as Sweco's team have leading roles.

Providing several specific and relevant examples, the organisation is to a convincing degree assessed to be multidisciplinary with a very large base of support available of relevant high-level specialists, which is assessed as a brilliant feature.

The offered project manager and head(s) very convincingly display experience with similar or to a higher degree complex and large projects. However, experience with partnering or similar processes is not displayed to a convincing degree.

Generally, the key persons are assessed to a convincing degree to be able to document experience with similar construction works. Head of project planning, project manager and construction manager are assessed to have an excellent to impressive basis of experience with large, complex projects which to some extent may be compared to the New Stadium in Aarhus.

The Tenderer is assessed to present subject specialists at an impressively high professional level, to a particularly high degree having stadium experience in which respect particularly the combination of international and local experience is given positive weight.



The Tenderer demonstrates a good overview of the project, the workflow, and the special focus areas in project development.

A very good understanding of the partnering process is displayed as well as a good understanding of project development and the model of cooperation with the contractor, which is considered positive in the evaluation.

In a convincing way, the Tenderer demonstrates many well-considered, specific tools and approaches to the project implementation process to ensure uniform quality, focus on time management, costs, and risk management for the entire project duration. The Tenderer demonstrates several specific measures for optimisation of the construction works, quality management and particularly the internal working relationship, which are to ensure uniform quality for the entire project duration, which is considered a positive feature. At a general level, a very satisfactory account is given of how to ensure progress of the project and supervision by establishing a physical project management office on the construction site.

Overall, the tender is evaluated to fulfil sub-criterion 3 brilliantly and is therefore awarded 9 points.

#### 5.5 Consulting fee (sub-criterion 4)

The Tenderer has offered 14% in consulting fee. The fee quote is assessed within the expected margin for the performance of the work.

The fee quote as well as the hourly rates are the second lowest in the tender procedure which, according to the evaluation model, results in 6.75 points.

#### 5.6 Total points

Overall, the Zaha Hadid Team is awarded 8.05 points as the final score of the tender, which results in a first place.

			ZAHA HADID	
No.	Sub-criterion	Weight	Points weighted	Points 0-10
1.	Architecture, functionality and technical solutions	35%	3.15	9
2.	Construction costs and robustness	25%	1.75	7
3.	Organisation, CVs and process	20%	1.80	9
4.	Consulting fee	20%	1.35	6.75
<b>Final score</b>		100%	<b>8.05</b>	

## 6. EVALUATION OF DORTE MANDRUP'S TENDER

*TEAM: Dorte Mandrup, Kristine Jensen Landskab & Arkitektur, Schlaich Bergermann Partner, Søren Jensen Rådgivende Ingeniørfirma, AGN - Niederberghaus & Partner, Birkmose Consulting.*

### 6.1 Summary

The suggested design appears bright and inviting with a poetic reading of the location where a clear crown along with roof and façade folds characterise the building with a striking contrast to the existing buildings. Functionally, the proposal is assessed to have solved the stadium design issue well, but the design is assessed to be inconveniently complex both in terms of architecture, but in particular technically where several issues are found to be unsolved or not sufficiently buildable.

The design concept is clear, but also prohibits the robustness of the project which is assessed not to be sufficient in respect of any future further processing, and the proposal has not clearly used the financial framework as a basis.

The organisation presented is assessed to be good and competent, including a thoroughly prepared and convincing process and method description. In addition, the fee is evaluated as average and within the expected margin for the performance of the work.



## 6.2 Architecture, functionality and technical solutions (sub-criterion 1)

The proposal has a distinct main concept whereby the stadium is located in a clearing in the forest. The proposal suggests folding of the façade, and the roof surface is orchestrated as a "crown" on the stadium. The folds create – in particular seen from a bird's eye view – an iconic stadium with a unique character and a three-dimensional experience. Upon arrival from Stadion Allé, the building stands out in relation to the forest with the "crown" in focus. The project takes as its starting point a simple idea unfolding to a complex concept. The new stadium seems overwhelming with the large "crown" which almost takes over in comparison to the existing buildings and thus dominates too much as compared to the existing building.



### 6.2.1 Coherence between the inside and the outside

The façade finds its inspiration in the façade division from the Heritage building (*Stadionhallerne*) and has a clear composition with a tripartition of the façade of the building: Bottom - transparent glass façade, Body - an open centre and Top - "the Crown". The proposal uses the main construction to establish a well-functioning transition zone between the inside and the outside. The folding of the façade and the roof creates a vivid expression whereby the experience of light and shade will constantly change 360 degrees around the stadium. The proposal works with high architectural awareness in the roof design which is experienced most successfully seen from above and when the match spectators sit under the beautifully constructed roof which is materialised by way of steel and polycarbonate.

The light materials (polycarbonate and steel constructions) create transparency which from a distance as well as at close range invites the surroundings in and shows life inside the concourse and the main stand. In the concourse, the façade opens up all the way around and creates an



impressive connection to the surroundings with views over the treetops in the forest. Generally, a good physical and visual connection exists between the inside and the outside from the concourse and the main stand. The translucent materials of the façade may be orchestrated scenographically and digitally by way of lighting and colour scheme. It has been poorly illustrated how a varied atmosphere inside the concourse may be created particularly in respect of ultra fans.

The landscape concept is a clearing in the forest. The project places the stadium in the existing natural terrain and a well-functioning flow presents itself with the arcade situation 360 degrees around the stadium. A natural incline is created together with a natural amphitheatre in the landscape, creating a fine passage between the soft, green landscape and the hard grey asphalt surfacing. The concourse follows the terrain in a weak, but unproblematic slope rising towards the south. The landscape has been nicely processed and includes good suggestions of squares and a variation of programmes around the stadium. The Fan Plaza is flexible and well-functioning, including non-match day activation, strengthening the spatial relation in the area. Positioning the existing 100-year-old statues in a circle along the Fan Plaza is a beautiful and striking gesture. Towards the south, a nice and well-functioning access is established to the racecourse of Jydske Væddeløbsbane via a slope naturally following the terrain.

### 6.2.2 Cultural environment

The project finds its inspiration in the forest of Marselissskoven which is translated into a white, light steel construction supporting the façade and encircling the stadium itself. The flickering, light and modern constructions greatly contrast with the red, mat historical buildings. The reference to the proportions of the Høgh-Hansen building's sloping decoration on the façade is clear, but particularly the upper layer, the top/the "crown", unfolds in a very complex way, and a better interaction between new and old is requested.

Other than an almost too clear contrast primarily witnessing of new and old, it is difficult to see an actual interaction or a meaningful dialogue between the preservation-worthy buildings and the new stadium. This particularly applies seen from Stadion Allé from where the project dominates a lot as compared to the Heritage building.



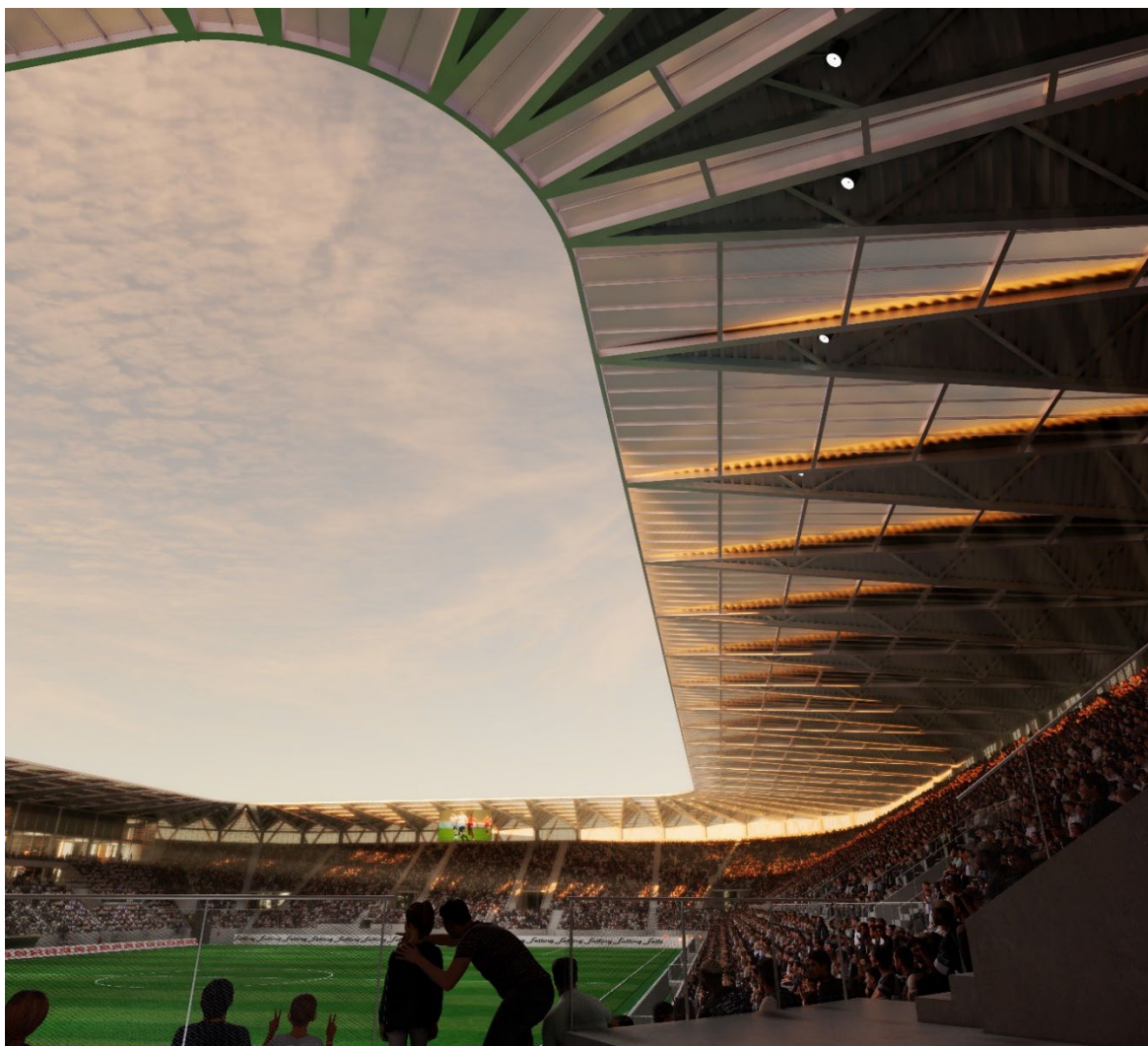
### 6.2.3 Functionality

It is a thoroughly processed and detailed project providing a qualified proposal as to a football stadium which fulfil the scheduled functional requirements above average.

The design of the stadium bowl is based on functional stadium-technical solutions, creating an intimate stadium experience. The main stand is impressive and naturally integrated in the bowl design. The roof design gives rise to concerns as to an inappropriate and disruptive shadow effect from the roof both for players and in connection with TV recordings. Consequently, the roof is the biggest concern in the project in terms of fulfilling the functional requirements inside the stadium.

The main stand is organised well with a good flow, good visual connection between the levels as well as a good visual connection to the Fan Plaza from all VIP levels, particularly with the extension of the main stand towards the NW, which also creates a connection to the fan bar. All levels overlook the surroundings via open corners towards the NW and NE, and level 4 overlooks Stadion Allé. Panoramic views are requested over the field from silver level. The arrangement of level 3 (gold level) does not enable the establishment of VIP lounges in the centre – only in the corners.

The concourse is functional with its column-free design, good functionality, good flow and openness to the surroundings. The differences of height are absorbed by way of ramps, which is considered fully functional.





#### 6.2.4 Areas

The areas of the proposal are collectively close to the ones laid out in the design contest programme, but the distribution of the areas varies, which affects the evaluation in a negative way.

#### 6.2.5 Experience by fans

The project provides a good setting for a first-rate fan experience both inside and outside. The proposal shows architecture which is both international and Scandinavian in its manifestation. The concourse contributes to activating the landscape and the urban open space around the stadium, working both in everyday life and supporting a stadium which is a magnet on event and match days. The inside and outside façade may be orchestrated as required and contributes to creating a varied fan experience.

As for the fan experience inside the stadium, more focus is desired on integrated design solutions in the roof design, particularly focusing on acoustics and disruptive light/shadow effects on the field of play.



#### 6.2.6 Sustainability

The Tenderer presents a good and thorough approach to the sustainability story of the project, among other things presenting four key objectives which are to depict the level of ambition of the project, and a scenario-based approach to LCA calculation. Overall, The Tenderer's proposal is assessed as good in terms of sustainability, even though some aspects are objectives only.

#### 6.2.7 Technical solutions, integrated design and buildability

The technical concept and related integrated solutions are generally assessed to have been inappropriately solved. A rational approach to buildability is requested to a higher degree as well as

a more efficient minimization of the material consumption, particularly for the construction of the roof and the façade.

The assessment is that integrated design has not been sufficiently considered, which has a considerable negative effect on the evaluation. In addition, the design is assessed not to have been optimised with acoustics in mind as an overall integrated design. Acoustics rather seem to have been accounted for as a rationalisation after the fact. Overall, the proposal is assessed at an average value for handling acoustics.

The starting point is an architectural concept with three-dimensional, load-bearing main construction and a three-dimensional roof construction, making the proposal extremely complex and implying unnecessary additional loads due to the piling up of snow, considerably increased roof area due to the folded construction, considerably increased construction time on the construction site and considerably increased construction work and operating costs. For the same reasons, the proposal is assessed as having been poorly solved in terms of buildability.

The overall comfort and performance of the proposal in terms of microclimate are assessed above average.

The bowl and the main stand have been constructed by way of traditional, known solutions. The roof construction with the many folds is extremely complex in terms of construction technology. The height of the folds is up to four metres, they are made up of several materials which are to be assembled in a complex geometrical pattern to be water resistant, involving difficult performance conditions. The deep folds also give rise to the piling up of snow increasing the load on the roof considerably. This requires over-dimensioning of the load-bearing constructions or industrial heat tracing, which will be expensive and inappropriate in a sustainability context. The many cuttings will result in a high waste of materials which partly further challenges economics, but which is also inconvenient in a sustainability context.

Large sloping steel grid trusses are used for absorbing the forces from the roof. This is both statically and in terms of mounting inconvenient and will require increased steel dimensions and complex mounting action. The steel construction is considerably extended due to the high snow load from the folds if industrial heat tracing is not used.

The folded structure increases the façade area considerably as compared to an even façade and results in many joints, including at the top and the bottom. The project has exceptionally many sealings and details which must be solved.

In terms of installation, the proposal is generally assessed as rational and with known buildable solutions.

The landscape design is worked out with a low-priced and optimised layout, which is assessed to be suitable. The terrain profile rises by 5 metres to the south, which minimizes the difference of height to the racecourse Jydsk Væddeløbsbane and thus minimizes the need for sheet pile or retaining wall.

#### **6.2.8 Upkeep and maintenance**

The operation and maintenance issues have been solved to a poor extent. Particularly the roof is a matter of concern, the many deep folds requiring frequent and continuous inspection and cleaning to prevent blocking of drains, etc. In addition, the many transparent materials require frequent cleaning since the location of the stadium in the forest implies considerable leaf fall and good

conditions for the growth of algae. The assessment is that operations will require comprehensive use of technical appliances or downright a permanent construction solution. In terms of operation and maintenance, the proposal is assessed to be very costly.

### **6.2.9 Design options**

The Tenderer complies with the functional design option requirements and implements these quite well in the general building construction without affecting the architectural and technical concept considerably. However, option 6 (event egress) is assessed not to have been solved satisfactorily, which is considered negative in the evaluation.

Overall, the tender is evaluated to fulfil sub-criterion 1 above average and is therefore awarded 6 points.



### **6.3 Construction costs and robustness (sub-criterion 2)**

Dorte Mandrup has estimated the capital sum at approx. DKK 622m for the present proposal. It is noted that the capital sum exceeds the financial framework to some extent, which affects the evaluation in a negative way.

The capital sum is also assessed as only just satisfactorily robust and realistic, and it is assessed to be predominantly likely that the amount will exceed the project's financial framework to a considerable extent if it is carried into effect in its present form.

Generally, the proposal is assessed to be less robust in terms of further processing within both the architectural concept and the technical solutions.



The proposal is assessed as extremely complex, which in a large-scale project as the one at hand is assessed to imply large risks in relation to both the amount of the final capital sum and the final construction period.

The estimated costs incidental to the design options are assessed to be satisfactory.

Overall, the tender is evaluated to fulfil sub-criterion 2, on an average, satisfactorily and is therefore awarded 5 points.

#### **6.4 Organisation, CVs and process (sub-criterion 3)**

The Tenderer offers several experienced and competent consultants with good CVs and a mixed experience base, the expertise and skills stated being targeted the relevant roles. In general, the organisation shows clear and logical skills and responsibilities, the persons responsible for the various expert areas having been chosen in such a way that their skills are used for solving the specific task at hand.

The role assignment and allocation of responsibilities internally in the team are generally assessed to be evident between the parties, but both Søren Jensen and Schlaich Bergermann Partner have been stated to perform "construction" without any sufficient description of the allocation of responsibilities or internal cooperation, which creates doubt as to how the team's experience with Danish construction traditions and international stadium expertise, respectively, is brought into play in a satisfactory way providing a good balance. This in particular is a focal point in relation to the demanding intensive collaborative processes with contractors and suppliers.

At a general level, the Tenderer presents a good working relationship in its internal project organisation, including a clear internal management support. In addition, clear external communication lines are presented, including specific examples of communications control, which is considered a positive feature. In addition, it is considered a positive feature that the team at company level, across disciplines and in pairs is able to document previous cooperation experience.

It affects the evaluation in a negative way that the organisation's robustness as to guaranteeing internal knowledge sharing, eliminating bottlenecks and any absence has not been sufficiently accounted for in the description.

It affects the evaluation in a negative way that the description does not sufficiently account for the way in which the organisation is multidisciplinary with a large base of support available of relevant high-level specialists.

The offered project manager and head(s) convincingly display experience with complex projects, including to some extent experience with similar partnering processes.

Generally, the key persons are assessed only to some extent to be able to document experience with similar construction works. Head of project planning, project manager and construction manager are assessed to have an excellent to impressive basis of experience, but not any convincing experience with projects which to a sufficient degree may be compared to the New Stadium in Aarhus, which affects the evaluation in a negative way.

It is assessed that the Tenderer presents subject specialists of a great, highly professional level, including in particular in respect of stadium expertise.

The Tenderer demonstrates a good overview of the project, the workflow and the special focus areas in project development.

Good understanding is displayed of the purpose of the partnering process and the cooperation, and reference projects are described which have been performed by processes similar to partnering processes, which is considered a positive in the evaluation.

The Tenderer provides a very good process description, thoroughly describing and demonstrating methods, tools and procedures which must ensure a uniform quality, focus on time management, costs and risk management for the entire project duration. Specific digital tools for management and quality assurance are particularly emphasised, which has a positive effect on the evaluation.

In addition, specific tools are accounted for as to how to monitor the project to the effect that progress is ensured, which is assessed to be a very convincing feature.

Overall, the tender is evaluated to fulfil sub-criterion 3 good and is therefore awarded 7 points.

#### **6.5 Consulting fee (sub-criterion 4)**

The Tenderer has offered 14.5% in consulting fee. The fee quote is assessed within the expected margin for the performance of the work.

The fee quote as well as the hourly rates are the third lowest in the tender procedure which, according to the evaluation model, results in 5.18 points.

## 6.6 Total points

Overall, the Dorte Mandrup Team is awarded 5.79 points as the final score of the tender, which results in a third place.

			DORTE MANDRUP	
No.	Sub-criterion	Weight	Points weighted	Points 0-10
1.	Architecture, functionality and technical solutions	35%	2.10	6
2.	Construction costs and robustness	25%	1.25	5
3.	Organisation, CVs and process	20%	1.40	7
4.	Consulting fee	20%	1.04	5.18
Final score		100%	5.79	

## 7. CONCLUSION

The following Tenderer is appointed winner of the tender procedure including negotiations regarding the New Stadium in Aarhus:

### TEAM ZAHA HADID

**Zaha Hadid Limited**  
**Sweco Danmark A/S**  
**Tredje Natur ApS**

#### 7.1 Points

The following points were given to the three Tenderers:

			COBE		ZAHA HADID		DORTE MANDRUP	
No.	Sub-criterion	Weight	Points weighted	Points 0-10	Points weighted	Points 0-10	Points weighted	Points 0-10
1.	Architecture, functionality and technical solutions	35%	2.45	7	3.15	9	2.10	6
2.	Construction costs and robustness	25%	1.75	7	1.75	7	1.25	5
3.	Organisation, CVs and process	20%	1.40	7	1.80	9	1.40	7
4.	Consulting fee	20%	2.00	10.00	1.35	6.75	1.04	5.18
<b>Final score</b>		100%	<b>7.60</b>		<b>8.05</b>		<b>5.79</b>	