## 7.3.İsmail Bey Bath (İznik city)

İsmail Bey bath was located in İznik 'Nicaea', inside of the city walls. It has no inscription about its history. The second name of the bath was 'Selçuk bath'. This building was constructed in 15th century. This bath was a part of 'Konak' a residency. The condition of this bath was ruin *(Say, 2011).*

The closure of the entrance part of the bath was mostly collapsed. However the transitional elements could be distinguished. Sliced triangular structural elements and curvilinear squinch were used as transitional elements *(Say, 2011).*

The adjacent space closure structure to the entrance space was collapsed. The triangular shapes were used as a transitional element *(Say, 2011).*

Most ornamented space was the other adjacent functional unit next to the entrance. Existed dome with spiral shape was the highest closure structure in this building. The space was rectangular however in one side of the space muqarnas ornamentation was used to shaped the upper side of the dome as square. On the corners between the masonry wall and the dome squinch structural elements with muqarnas ornamentation were used to gather *(Say, 2011).*

According to the drawings of 'Otto-Dorn' there were small curvilinear elements on the top of the dome structure *(Say, 2011).*

The inner space that can be passed from the most ornamented space was closed with eight sliced dome structure. The transitional elements were triangular brick structures *(Say, 2011).*

The masonry structure of this bath was built with stone and brick row patterns construction order. The transitional elements were constructed with brick material. Sliced squinch and muqarnas were used as transitional elements between masonry walls and dome structures. Pendentive was not used as transitional element. The building elements especially brick was used in different axis to shape interior ornamentation *(Say, 2011).*

Fig 7.29: İsmail Bey Bath, south west view

Fig 7.30: İsmail Bey Bath, west view

Fig 7.31: İsmail Bey Bath, south east view

Fig 7.32: İsmail Bey Bath, spiral dome view

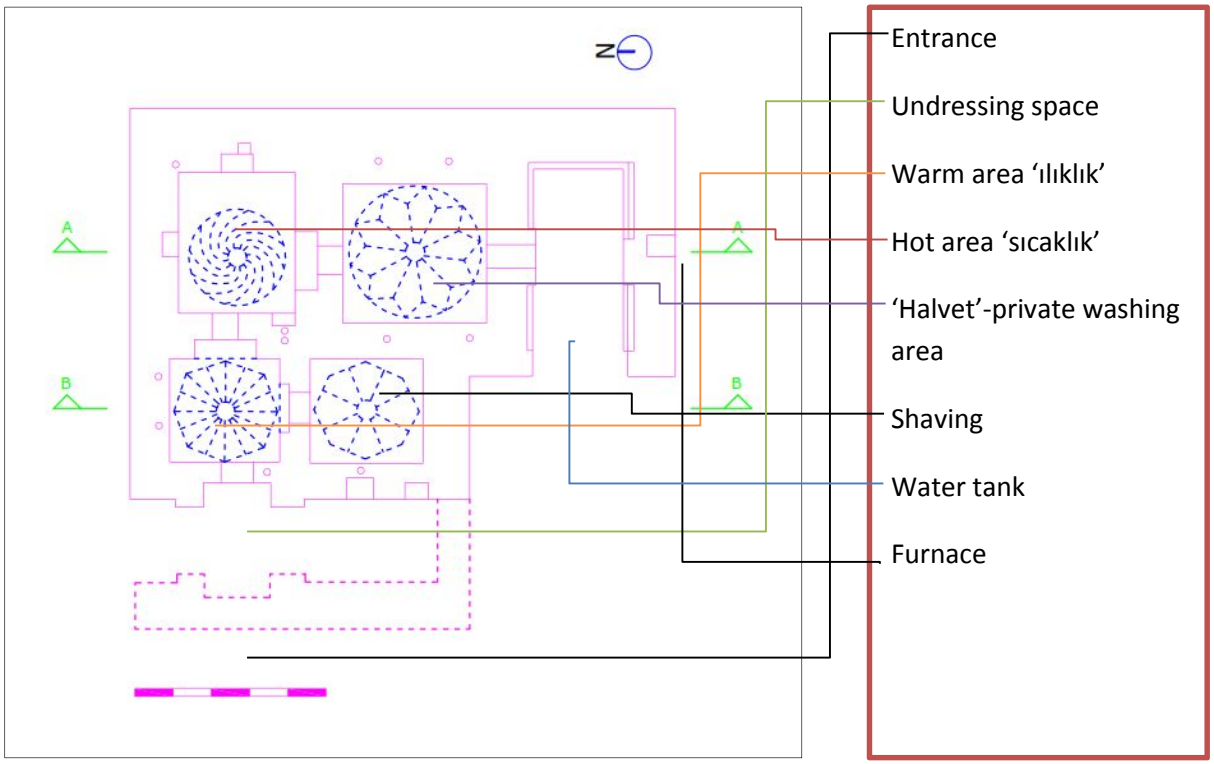



Fig 7.33: İsmail Bey Bath, functional specifications

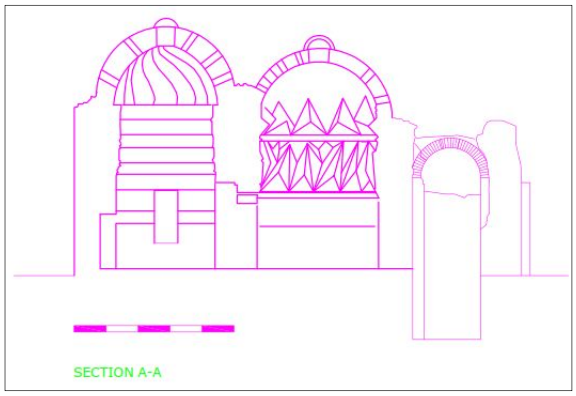



Fig 7.34: İsmail Bey Bath, section A-A

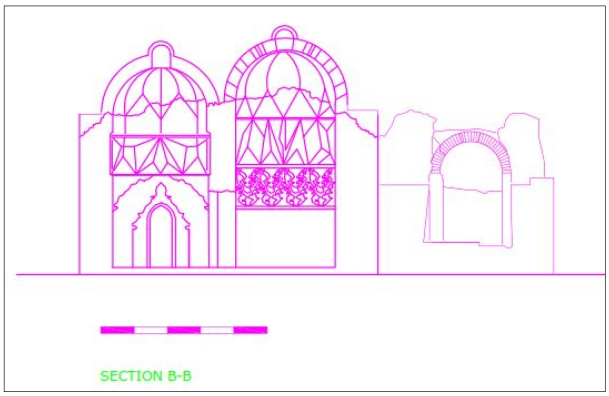



Fig 7.35: İsmail Bey Bath, section B-B

## 7.3.1. Methodological application (A)

Table 7.13: Qualitative methods for evaluating the quality of the walls in İsmail Bey bath: A

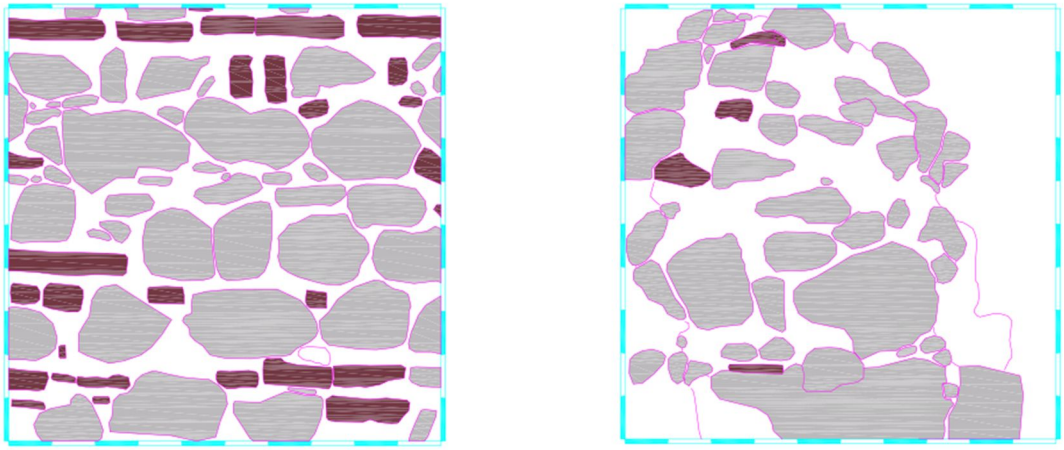
| ***Qualitative Methods for Evaluating the Quality of the Walls*** | |
|---|---|
| ***Bursa-İznik City, İsmail Bey Bath*** | |
| ***Stone masonry of minute size, mixed with natural pebbles, split, stones and brick pieces*** | ***PHOTOS*** |
|  | |
|  | ***SCHEMA*** |

Table 7.14: Qualitative methods for evaluating the quality of the walls in İsmail Bey bath: B

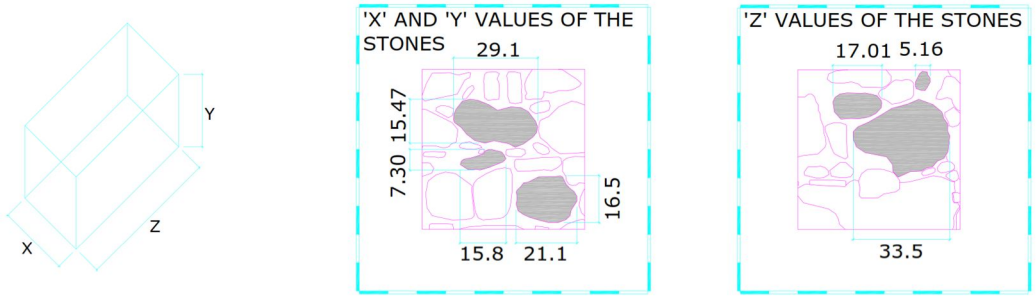
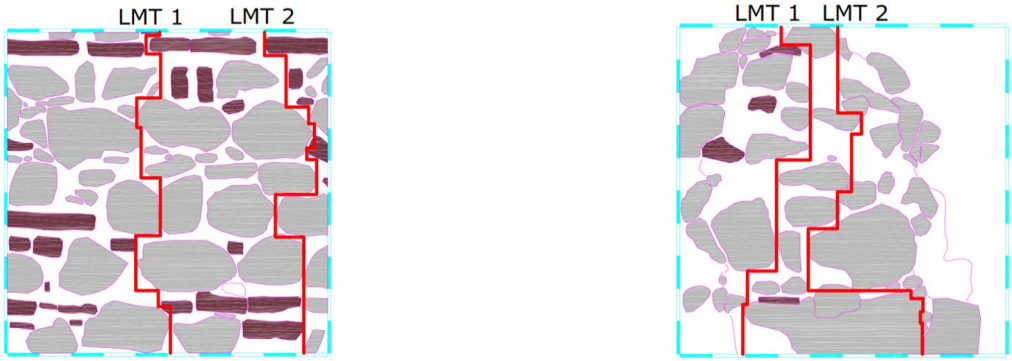
<table>
<tr><td colspan="2">Description of İsmail Bey Bath:<br>Masonry stone structure is composed with various sizes and irregular shapes of stones and bricks. There was openings for timber tie beam connection inside of the masonry stone walls. On the sections of the masonry wall small pebbles and stones could be seen. The wall fabric is chaotic, it was not respected to the horizontal rows or offset of the vertical joints. Diatone stones are not used inside of the masonry stone wall structure. There was an effort for horizontal linearity.</td><td>DESCRIPTION</td></tr>
<tr><td colspan="2">In İsmail Bey bath; stone material is composed of recrystallized lime stone which extract from İznik deliktaş district mines and antique Roman mines. And the mortar is composed of quartz pebbles, cohesive lime and volcanic rock pieces.</td><td rowspan="3">MATERIAL</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Stone Sample</td><td>Mortar Sample</td></tr>
<tr><td colspan="2"> 
</td><td rowspan="2">GEOMETRY OF THE MATERIAL</td></tr>
<tr><td colspan="2">APPROXIMATION OF STONE DIMENTIONS OF THE MASONRY<br>X=29.1cm - 21.1cm - 15.8cm / Y= 16.5cm - 15.4cm - 7.30cm / Z=33.5cm - 17.01cm - 5.16cm</td></tr>
<tr><td colspan="2"> 
</td><td>LMT</td></tr>
</table>

Table 7.15: Qualitative methods for evaluating the quality of the walls in İsmail Bey bath: C

| *P.D.* | *Q.M.* | *F.R.E.* | *S.V.J.* | *Q.R.E.* | *P.H.R.* | *S.R.E.* | *Category* | *Vertical* | *Out of Plane* | *In the Plane* | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NR | NR | NR | NR | R | NR | PR | ***Method of*** | **C** | **C** | **C** | ***ANALYSIS OF IQM*** |
| ***Vertical IQM*** | | | | | | | ***Scoring*** | | | | |
| 0 | 0 | 0 | 0 | 1 | 0 | 0.5 | ***LMT*** | | LMT 1= 129.7<br>LMT 2= 160.2 | LMT 1= 141.6<br>LMT 2= 142.8 | |
| ***Out of Plane IQM*** | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 1 | 0 | 0.5 | ***IQM*** | 0.5 | 0.5 | 0.5 | |
| ***In the Plane IQM*** | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 1 | 0 | 0.5 | | | | | |
| ***IQM=QRE x (PHR+PD+FRE+SVJ+SRE+QM)*** | | | | | | | | | | | |
| ***fm (N/cm²)*** | min=104.7 max=186.4 | | | | | | | | | | ***MECHANIC PARAMETERS (MIN-MAX)*** |
| ***E (N/mm²)*** | min=598.08 max=891.1 | | | | | | | | | | |
| ***To (N/cm²)*** | min=2.1 max=3.3 | | | | | | | | | | |

### 7.3.2. Methodological application (B)

Perspective views and general bird eye views of “İsmail Bey” bath is shown on the following pictures.

Fig 7.36: Perspective view of “İsmail Bey” bath

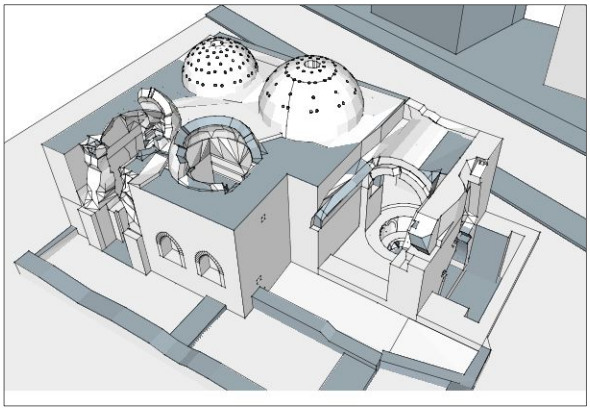


Fig 7.37: South-west view of “İsmail Bey” bath

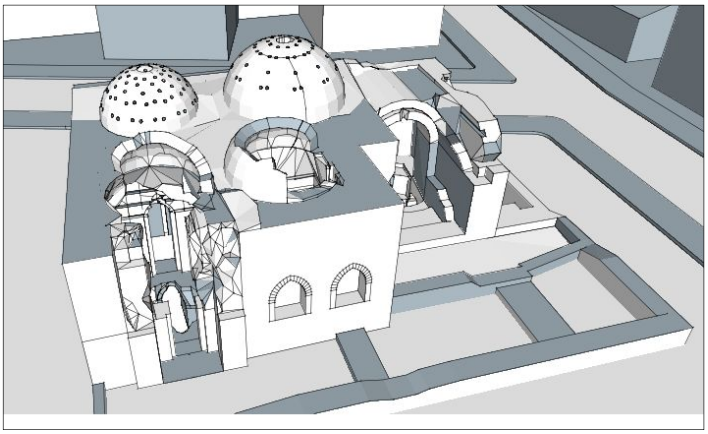


Fig 7.38: West view of “İsmail Bey” bath

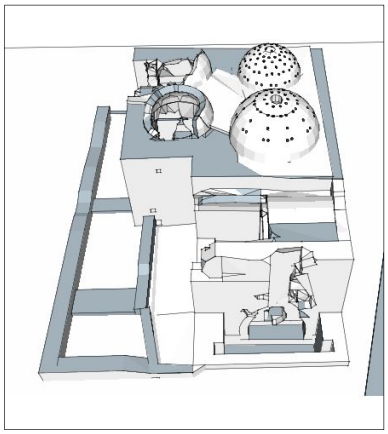


Fig 7.39: South view of “İsmail Bey” bath