NIKU OPPDRAGSRAPPORT 91/2014

# FINNEGÅRDEN 1A, BRYGGEN

Archaeological investigation of drillings
for two monitoring wells, 2014.

Dunlop, A. R.


NORSK INSTITUTT FOR KULTURMINNEFORSKNING

**Norsk institutt for kulturminneforskning (NIKU)**
Storgata 2, Postboks 736 Sentrum, 0105 Oslo
Telefon: 23 35 50 00
www.niku.no

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| | Forsidebilde<br>Cramped quarters, MB49. Dunlop, NIKU, 2014. | |
| Forfatter(e)<br>Dunlop, A. R. | Sider<br>22 | Tilgjengelighet<br>Åpen |
| | Avdeling<br>Arkeologi | |

| Prosjektleder<br>A. R. Dunlop |
|---|
| Prosjektmedarbeider(e) |
| Kvalitetssikrer<br>K. Paasche |

| Oppdragsgiver(e)<br>Statsbygg |
|---|

Sammendrag
I mars 2014 ble det utført naverboring for installasjon av to nye miljøbrønner – betegnet MB48 og MB49 – i svalgangen langs den nordvestre siden av Det Hanseatiske Museum. Den arkeologiske registreringen ble foretatt av en arkeolog fra NIKU's Bergenskontor. Boringene var bare 4 meter dype, men begge to kom ned i middelalderske lag. Stort sett var bevaringstilstanden til kulturlagene dårlig.

Emneord
Bryggen, Det Hanseatiske Museum, settlement damage, monitoring wells, MB48, MB49, state of preservation

Avdelingsleder

K. Paasche

# Forord

Statsbygg takkes for oppdraget. Multiconsult AS og de ansatte ved Det Hanseatiske Museum takkes for hjelpen.

# Innholdsfortegnelse

# 1 Introduction

In March 2014, the Bergen office of the Norwegian Institute for Cultural Heritage Research (NIKU) was tasked by *Riksantikvaren* (Norway's Directorate for Cultural Heritage) with the archaeological investigation of two rotary drillings for the installation of new monitoring wells – designated MB48 and MB49 – on the north-western side of *Det Hanseatiske Museum*: the Hanseatic Museum (Finnegården 1A, gnr. 167, bnr. 1659, Bergen), which is one of southern Bryggen's architectural landmarks and also forms part of the World Heritage Site of Bryggen. The work was undertaken in order to acquire more baseline information on underground conditions to help shed light on the causes of the quite severe settling that is affecting the building. Two monitoring wells – designated MB34 and MB35 – were installed on either side of the museum building in 2010 (Dunlop 2010) and have provided monitoring data, but it was felt that these two needed to be supplemented by two new monitoring wells.


**Figure 1. Approximate positions of monitoring wells MB48 and MB49.**

A. R. Dunlop from the Bergen office of the Norwegian Institute for Cultural Heritage Research (NIKU) was responsible for the archaeological side of things, with the local firm of Multiconsult AS doing the drilling work and dipwell installation. The purpose of the work was two-fold:

a) to install the monitoring wells, naturally with full archaeological investigation of the soil sequence in each of the boreholes; and

b) to obtain soil samples from various depths in each borehole. These samples will be subjected to chemical analysis, which is the responsibility of Henning Matthiesen (from the Department of Conservation at the National Museum of Denmark). Analysis of a variety of parameters will provide a

detailed picture of preservation conditions at different depths in the deposits, and the results can then be compared to the archaeological assessment – based on visual inspection – of the state of preservation.

The work is a contribution to the general environmental monitoring project covering the Bryggen area, with particular regard to the mapping/modelling of the hydrogeology and geochemical make-up of the southern area, which has so far remained largely uncharted from this angle. (In addition, the information may well come in very useful in connection with a proposed major infrastructure development project – *Bybane Nord*, the northern line of the Bergen Light Railway – that may well eventually impact the area.)

MB48 and MB49 come under NIKU project number 15621249-2. The work was funded in its entirety by *Riksantikvaren* (the Norwegian Directorate for Cultural Heritage), channelled via *Statsbygg*.

# 2 Archaeological & topographical information

MB48 and MB49 are at either end of a covered gallery running along the north-western side of the museum building, which is from sometime after the major fire of 1702. The area immediately to the north-west is occupied by a block of buildings that were erected in the early 20th century. These buildings have deep basements, which entailed the removal of a considerable volume of the upper cultural deposits and their replacement with thick deposits of largely inorganic material. At least one of the basements (under Bryggen 3) is kept dry by means of a groundwater pump.

The building immediately to the north-east of the museum was more or less fully excavated under the leadership of Andrzej Gołembnik in 1982 (Gołembnik 1993). The cultural deposits were up to 3.5 metres thick and the bulk of them were from the Middle Ages. The site contained a profusion of foundation timbers, some very massive, and at the bottom was found a row of three of the small, square, stone-filled *bolverkskar* that represent the quayfront at around 1170.

This means that large volumes of the original deposits on two sides of *Det Hanseatiske Museum* have been removed and replaced with deep basements in modern times. And this in turn means that the hydrological situation is very dynamic.

# 3 Methods

As in most previous dipwell installations, the drilling was done using an auger, a rotary drill, whose total “thread” length was 1.0 metre. The auger was driven down under rotation one metre at a time, and then retracted without rotation so that the adhering soil could be inspected (after having scraped away the outermost material, which could readily become “contaminated” as a result of contact with higher strata).

Documentation/recording adhered to the standard procedures employed by NIKU, and all photography was done using a digital camera. Each borehole has been assigned its own reference number for identification purposes by Bergen Museum’s *Middelaldersamlingen* (the Medieval Collections): «BRM 1044» for MB48; and «BRM 1045» for MB49.

# 4 The drillings

In this report, the stratigraphic sequence in each drilling is presented in tabular form. One of the columns is headed PC, which stands for Preservation Category, and the values in this column are in accordance with the State of Preservation Scale.

The various strata distinguished in the drillings have been numbered in the following way. First comes "MBXX" (for the dipwell in question: MB stands for *miljøbrønn*, the Norwegian for "dipwell") followed by sequential numbering of the individual stratum (from top to bottom). Thus "MB48-01" denotes the first archaeological stratum in dipwell MB48.

The abbreviation "masl" stands for "metres above sea-level". Depths below sea-level are therefore prefixed with a minus sign.

## 4.1 Drilling MB48: sediment sequence (visual inspection)

MB48 is situated at the northeastern end of the covered gallery. Multiconsult AS determined its coordinates as N6701160.80/E297595.40, and the planking was at 1.10 masl. Investigation conditions were not ideal (cramped quarters, poor lighting).

| Masl from | Masl To | Stratum number | Same as stratum no. | Samples/ $^{14}$C-dating/ finds | Accession number | Per-iod | PC | Description |
|---|---|---|---|---|---|---|---|---|
| 1.10 | 0.65 | | | | | | - | Empty space under gallery planking |
| 0.65 | 0.55 | MB48-01 | | | | Rec-ent | B1 / C1 | Soft, dark-brown, sandy humus with some very poorly preserved smallish wood-chips/wood pieces (mostly parallel to plane of deposition)<br>Only earthy odour<br>No darkening |
| 0.55 | 0.45 | MB48-02 | | | | Rec-ent | B1 / C1 | Soft, grey-black, sandy humus with some very poorly preser-ved smallish woodchips/wood pieces (mostly parallel to plane of deposition) and a few fibres, possibly animal<br>Faint $H_2S$ odour<br>No darkening |
| 0.45 | 0.30 | MB48-03 | MB49-03 | | | Rec-ent | C- | Demolition deposit: many sec-ondarily burnt pantile pieces (and a few unburnt) in a matrix of fine sand<br>Distinct hydrocarbon odour (probably paraffin)<br>Should be derived from the fire of 1702 |

| Masl from | Masl To | Stratum number | Same as stratum no. | Samples/ $^{14}$C-dating/ finds | Accession number | Per-iod | PC | Description |
|---|---|---|---|---|---|---|---|---|
| 0.30 | 0.10 ca. | MB48-04 | | Sample: MB48-01 | | Post med | C2 | (Highly organic)<br>Loose, dark-grey/brown with many smallish, poorly preser-ved wood pieces (the majority parallel to plane of deposi-tion), a few birch-bark pieces and twigs<br>No humus<br>Strong hydrocarbon odour (probably paraffin)<br>No darkening<br>Poor preservation |
| 0.10 ca. | -0.80 ca. | MB48-05 | MB49-04 | Sample: MB48-02 from -0.55 to -0.65 masl | | Post med | C2 | Very loose, dark-grey, sand, gravel, pebbles and many smallish stones (many quartz), a few poorly preserved wood-chips and wood pieces, some hazelnut shells, a few pieces of bark, numerous animal bones, a few fibres (possibly animal), and some crumbled pieces of red brick/tile<br>Components were randomly inclined<br>Strong hydrocarbon odour (probably paraffin)<br>Weak $H_2S$ odour<br>Poor preservation |
| -0.80 ca. | -0.90 | MB48-06 | | | | Post med | C2 | Loose, dark-brown, poorly preserved sawdust/saw-chips, hazelnut shells, some sand<br>Impossible to detect odour<br>Poor preservation |
| | | | | | | | | The length from -0.90 to -1.90 masl was not good, because the auger was stuck in timber for a long time |
| -0.90 | -1.35 | MB48-07 | | Sample: Treprøve 1 from -1.20 masl | | Med ? | C3 | Probably mainly a horizontal timber (or more than one)<br>Fresh colour, but the wood was quite easily snapped<br>Medium odour of freshly cut pinewood<br>Medium preservation |

| Masl from | Masl To | Stratum number | Same as stratum no. | Samples/ $^{14}$C-dating/ finds | Accession number | Per-iod | PC | Description |
|---|---|---|---|---|---|---|---|---|
| -1.35 | -1.75 | MB48-08 | | Sample: MB48-03 (from whole stratum) | | Med | C3 | Loose, dark-grey/brown, sand, stones, numerous small to large medium-well preserved woodchips, some hazelnut shells, a few pieces of bark, some moss and some animal bones; no humus<br>Components were randomly inclined?<br>Medium $H_2S$ odour<br>Slow darkening<br>Medium preservation |
| -1.75 | -1.90 | MB48-09 | | Sample: Treprøve 2 from -1.80 masl | | Med | C3 | Horizontal timber<br>Fresh colour, but the wood was quite easily snapped<br>Medium odour of freshly cut pinewood<br>Medium preservation |
| -1.90 | -2.85 | MB48-10 | MB49-05 | Samples: MB48-4 from -2.00 to -2.10 masl<br>MB48-5 from -2.50 to -2.60 masl<br>$^{14}$C-sample (hazelnut shell) from -2.80 masl<br>AD 970-1160 | BRM1044 /1 | Med | C2 | (Highly organic)<br>Wet, relatively loose, grey/-brown, many saw-chips, some woodchips and wood pieces, numerous hazelnut shells, some pine-bark pieces, some patchy concentrations of med-ium-well preserved moss, a few animal and fish bones, a few fibres, and a little sand and a few smallish stones; no humus visible<br>No visible pieces of brick/tile<br>Some sea shell fragments and a more *gyttja*-like matrix in stratum's lowest part<br>Medium $H_2S$ odour<br>Slow darkening<br>Poor preservation, all things considered |
| -2.85 | ↓ | MB48-11 | | | | | | Light-grey, somewhat com-pact, fine/medium fine sand with some sea-shell fragments<br>Possibly transition to natural deposits |
| | | | | | | | | Rotary drilling abandoned at ca. -2.90 masl |

The thickness of the cultural deposits in this area is probably between 4 and 5 metres. There was one demolition deposit situated near the top of the sequence (stratum MB49-03 – see report section 5.3 for this stratum's probable dating).

## 4.2 Drilling MB49: sediment sequence (visual inspection)

MB49 is situated at the southwestern end of the covered gallery. Multiconsult AS determined its coordinates as X6701155.65/E297588.85, and the planking was at 1.05 masl. Investigation conditions were not ideal (cramped quarters, poor lighting).

| Masl from | Masl To | Stratum number | Same as stratum no. | Samples/ $^{14}$C-dating/ finds | Accession number | Per-iod | PC | Description |
|---|---|---|---|---|---|---|---|---|
| 1.05 | 0.60 | | | | | | - | Empty space under gallery planking |
| 0.60 | 0.45 | MB49-01 | | | | Rec-ent | B2 / C2 | Probably mainly a horizontal timber<br>Most of the wood fell off the auger<br>Sourish odour of pinewood<br>Poor preservation |
| 0.45 | 0.0 | MB49-02 | Kontekst M in the test pit | Sample: MB49-01 from 0.35 to 0.25 masl | | Rec-ent | C2 | Soft, brownish, poorly preser-ved woodchips/wood pieces (mostly parallel to plane of deposition), some twigs and pieces of birch-bark<br>No visible pieces of brick/tile<br>Medium $H_2S$ odour<br>No darkening<br>Poor preservation |
| 0.0 | -0.20 | MB49-03 | MB48-03 | | | Rec-ent | C- | Demolition deposit: many sec-ondarily burnt pantile pieces (and a few unburnt) in a matrix of fine sand; some scattered pieces of wood<br>Should be derived from the fire of 1702 |
| -0.20 | -2.30 | MB49-04 | MB48-05 | Samples:<br>MB49-02 from -0.55 to -0.65 masl<br>MB49-03 from -1.55 to -1.65 masl<br>Bone and leat-her pieces from -1.85 masl<br>Sherd of Meri-da type pottery from -2.10 masl<br>$^{14}$C-sample (hazelnut shell) from -1.80 masl<br>AD 1210-1285 | BRM1045 /2<br><br>BRM1045 /1 | Post med / med | C2 | Wet, loose, dark-grey, sand, gravel, pebbles and many smallish stones (many quartz), a few poorly preserved wood-chips and wood pieces, some hazelnut shells, a few pieces of bark, numerous animal bones, and some crumbled pieces of red brick/tile<br>Somewhat more compact from -0.95 to -1.15 masl<br>Lot of sea shell fragments at around -1.45 masl<br>Components were randomly inclined<br>Some hydrocarbon odour (probably paraffin) from -0.80 to -0.95 masl<br>Weak to medium $H_2S$ odour<br>No darkening<br>Poor preservation |

| Masl from | Masl To | Stratum number | Same as stratum no. | Samples/ $^{14}$C-dating/ finds | Accession number | Per-iod | PC | Description |
|---|---|---|---|---|---|---|---|---|
| -2.30 | ↓ | MB49-05 | MB48-10 | Sample: MB49-04 from -2.45 to -2.55 masl | | Post med | C2 | (Highly organic)<br>Wet, relatively loose, grey/-brown, many sawchips, some woodchips and wood pieces, numerous hazelnut shells, some pine-bark pieces, some medium-well preserved moss, a few animal and fish bones, a few fibres, and a little sand and a few smallish stones; no humus visible<br>No visible pieces of brick/tile<br>Medium to strong $H_2S$ odour<br>Slow darkening<br>Poor preservation, all things considered |
| | | | | | | | | Rotary drilling abandoned at ca. -2.60 masl (encountered an obstruction, probably a timber) |

The archaeological deposits are probably between 4 and 5 metres thick. There was one demolition deposit situated near the top of the sequence (stratum MB49-03 – see report section 5.3 for this stratum's probable dating).

# 5 Finds & Dating

## 5.1 MB48

### 5.1.1 Archaeological material

No archaeological dating material was recovered.

### 5.1.2 Radiometric dating

One sample was taken for $^{14}$C-dating. Hazelnuts (accession no. 1044/1) from -2.80 masl in stratum MB48-10 were dated to 998±34 BP, calibrated to AD 970-1160. This is somewhat earlier than expected.

## 5.2 MB49

### 5.2.1 Archaeological material

One wall-sherd of probable Merida-type pottery (accession no. 1045/2) was found in stratum MB49-04 at around -2.10 masl.

### 5.2.2 Radiometric dating

One sample was taken for $^{14}$C-dating. Hazelnuts (accession no. 1045/1) from -1.80 masl in stratum MB49-04 were dated to 775±32 BP, calibrated to AD 1210-1285.

## 5.3 Dating: conclusions

In MB48 there was a demolition deposit (stratum MB48-03) at ca. 0.45 masl; this should derive from the fire of 1702. The transition from post-medieval to medieval deposits probably takes place at about -1.00 masl. There are no finds to confirm this (pieces of brick/tile were encountered down to ca. -0.80 masl), but the suggested level is certainly not absurd.

In MB49 the aforementioned demolition deposit thought to be from the fire of 1702 (stratum MB49-03) cropped up at ca. 0.0 masl. The transition from post-medieval to medieval deposits probably takes place at about -1.00 masl or somewhat further down. There was a wall-sherd of probable Merida type pottery from -2.10 masl; this type dates back to medieval times, though in Bergen it is usually encountered in post-medieval contexts. The $^{14}$C-dating sample – which is dated to the 13$^{th}$ century – came from above the pottery sherd.

# 6 State of preservation assessments

Assessments of the "health" of the archaeological sequences are presented in table 1 below. Generally, the situation can be characterized as barely satisfactory, at most. However, it must be pointed out that, in the case of layers exhibiting poor preservation, archaeological assessments of the state of preservation of strata in boreholes cannot provide a sure determination as to whether the observed decomposition is due to ongoing processes, or took place at the time of the layer's deposition instead.

Table 1. Schematic comparative presentation of state of preservation (archaeological assessment) of the deposits in MB48 and MB49. Each individual symbol represents a length of about 20 centimetres, and depth from the surface increases from left to right. Grey shading indicates the approximate position of the dipwell's filter.

| MB48 |
|---|
| 00X?X |
| XXXXX |
| XXXXX |
| XXXXA |

| MB49 | Masl |
|---|---|
| 00XXX | 1.0 – 0.0 |
| ?XXXX | 0.0 – -1.0 |
| XXXXX | -1.0 – -2.0 |
| XXXA | -2.0 – -3.0 |

| SYMBOLS | |
|---|---|
| X - VERY POOR | ? - INDEFINABLE |
| X - POOR | 0 - NO SOIL RECOVERED |
| X - MEDIUM | N - NATURAL |
| X - GOOD | A - DRILLING ABANDONED |
| X - VERY GOOD | § - INORGANIC |
| | F - BEDROCK |

As for MB48, none of the strata were better than medium-well preserved – and two of the medium-well preserved strata were timbers – while all the assessable strata in MB49 were poorly preserved.

This situation is quite certainly the result of a combination of the following factors:
- the depth to which the construction pit for the 1905 building was excavated;
- the relatively aerated soil that was used to backfill the construction pit;
- regular pumping of groundwater to keep the basement of Bryggen 3 dry;
- blowouts (at least two in number) of the water main running along Bryggen;
- continued exposure to sulphate-rich seawater

All in all, the prognosis for most of the organic deposits down to ca. -3.0 masl seems not to be very encouraging. What is sure is that *Riksantikvaren* should refuse permission to any subsurface works that might worsen preservation conditions in the immediate area.

# 7 Concluding remarks

Monitoring wells MB48 and MB49 provide a great deal of information to supplement monitoring wells MB34 and MB35. The subterranean situation in the area close to the basement below property Bryggen 3 seems not to give grounds for much optimism regarding the future stability of the museum building, and some kind of mitigation measure(s) is definitely called for. Both drillings, though only four metres in depth, reached down to medieval layers.

# 8 References

Dunlop, A. R. 2010. The Bryggen Monitoring Project, Part 11: report on the archaeological investigation of two dipwell boreholes, Bryggen and Finnegårdsgaten, 2010. – NIKU Oppdragsrapport 246/2010.

Gołembnik, A. 1993. Report on the excavations in Finnegården 3A. – Riksantikvarens utgravningskontor for Bergen. [Organized for publication by A. R. Dunlop.]

# 9 Documentation (NIKU)

22 digital photos (in NIKU's new photo database)

**Photo list**

| Picture no. | Situation | Motif |
|---|---|---|
| niku_ark_323547 | Feltdok., MB48 | Length 0,65 to 0,10 masl |
| niku_ark_323548 | Feltdok., MB48 | Length 0,10 to -0,90 masl |
| niku_ark_323549 | Feltdok., MB48 | Length 0,10 to -0,50 masl |
| niku_ark_323550 | Feltdok., MB48 | Length -0,30 to -0,90 masl |
| niku_ark_323551 | Feltdok., MB48 | Cramped quarters |
| niku_ark_323552 | Feltdok., MB48 | Cramped quarters |
| niku_ark_323553 | Feltdok., MB48 | Length -0,90 to -1,90 masl |
| niku_ark_323554 | Feltdok., MB48 | Length -0,90 to -1,45 masl |
| niku_ark_323555 | Feltdok., MB48 | Length -1,40 to -1,90 masl |
| niku_ark_323556 | Feltdok., MB48 | Length -1,90 to -2,90 masl |
| niku_ark_323557 | Feltdok., MB48 | Length -1,90 to -2,50 masl |
| niku_ark_323558 | Feltdok., MB48 | Length -2,30 to -2,50 masl |
| niku_ark_323559 | Feltdok., MB49 | Length 0,65 to 0,05 masl |
| niku_ark_323560 | Feltdok., MB49 | Length 0,05 to -0,95 masl |
| niku_ark_323561 | Feltdok., MB49 | Length 0,05 to -0,55 masl |
| niku_ark_323562 | Feltdok., MB49 | Length -0,45 to -0,95 masl |
| niku_ark_323563 | Feltdok., MB49 | Cramped quarters |
| niku_ark_323564 | Feltdok., MB49 | Length -0,95 to -1,95 masl |
| niku_ark_323565 | Feltdok., MB49 | Length -0,95 to -1,55 masl |

| Picture no. | Situation | Motif |
|---|---|---|
| niku_ark_323566 | Feltdok., MB49 | Length -1,40 to -1,95 masl |
| niku_ark_323567 | Feltdok., MB49 | Length -1,95 to -2,55 masl |
| niku_ark_323568 | Feltdok., MB49 | Length -1,95 to -2,55 masl |

**MB48 photo**

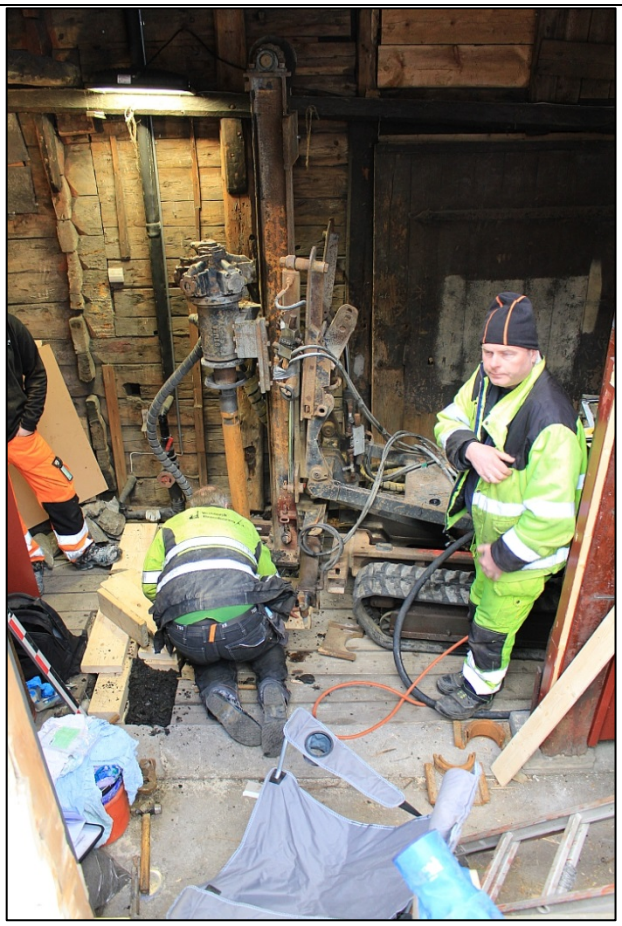

niku_ark_323547


niku_ark_323548


niku_ark_323549


niku_ark_323550


niku_ark_323551



niku_ark_323552

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niku_ark_323556


niku_ark_323557


niku_ark_323558

**MB49 photo**


niku_ark_323559


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niku_ark_323561


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niku_ark_323567

niku_ark_323568

| | |
|---|---|
| NIKU prosjektnummer | 15621249-2 (2014) |
| Berørt område | Finnegården 1A, Bryggen |
| Gnr/Bnr | 167/1659 |
| Oppdragets art | Arkeologisk registrering av naverboringer |
| Vedtaksdato; saksnummer | 3.3.2014; 08/00262 |
| Oppdragsgiver | Riksantikvaren Distriktskontor Vest |
| Oppdraget utført av | NIKU distriktskontor Bergen v/ A. R. Dunlop |
| Oppdraget utført dato | Mars 2014 |
| Overflate, dagens | ca. 1,00 moh |
| Automatisk fredete kulturminner til stede | Ja |
| Kulturhistorisk tolkning | Rivningslag, utfyllingslag, avfallslag |
| BRM-nummer | 1044, 1045 |

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NIKU Oppdragsrapport 91/2014

**NIKU hovedkontor**
Storgata 2
Postboks 736 Sentrum
0105 OSLO
Telefon: 23 35 50 00

**NIKU Tønsberg**
Farmannsveien 30
3111 TØNSBERG
Telefon: 934 66 230

**NIKU Bergen**
Dreggsallmenningen 3
Postboks 4112 Sandviken
5835 BERGEN
Telefon: 922 89 252

**NIKU Trondheim**
Kjøpmannsgata 25
7013 TRONDHEIM
Telefon: 922 66 779 /
405 50 126

**NIKU Tromsø**
Framsenteret
Hjalmar Johansens gt. 14
9296 TROMSØ
Telefon: 77 75 04 00

**BRM1044/1**
**Byfunn** fra **middelalder/nyere tid** fra FINNEGÅRDEN 1A, av LADEGÅRDEN (167), BERGEN K., HORDALAND.
1) **prøve, annet** av hasselnøtt.
Hasselnøtteskall til 14C-datering (prøvens lab. ref.-nr. Ua-48921). Datert til 998±34 BP, kalibrert til AD 970-1160 (95,4% sannsynlighet). (Oversendt Uppsala sent mai 2014; resultat mottatt 18.8.2014). Resultatet er noe tidlig i forhold til forventet alder ut fra stratigrafisk kontekst.

*Datering:* AD 970-1160
Tatt ut av R. Dunlop 25.3.2014 fra sjikt MB48-10 på -2,80 moh.
*Funnomstendighet:* Arkeologisk registrering/forundersøkelse. Prøven kom fra naverboring for anleggelse av miljøbrønn MB48.
*Orienteringsoppgave:* Miljøbrønn MB48 ligger ved den nordøstre enden til svalgangen langs den nordvestre siden til Det Hanseatiske Museum.
*Kartreferanse/-koordinater: Projeksjon:* EU89-UTM; Sone 32, *N:* 6701160,80, *Ø:* 297595,40.
*Funnet av:* Rory Dunlop, NIKU distriktskontor Bergen.
*Funnår:* 2014.
*Katalogisert av:* Rory Dunlop.

**BRM1045/1-2**
**Byfunn** fra **middelalder/nyere tid** fra FINNEGÅRDEN 1A, av LADEGÅRDEN (167), BERGEN K., HORDALAND.
1) **prøve, annet** av hasselnøtt.
Hasselnøtteskall til 14C-datering (prøvens lab. ref.-nr. Ua-48897). Datert til 775±32 BP, kalibrert til AD 1210-1285. (Oversendt Uppsala sent mai 2014; resultat mottatt 15.8.2014). Resultatet er veldig tidlig i forhold til forventet alder ut fra stratigrafisk kontekst.

*Datering:* AD 1210-1285
Tatt ut 26.3.2014 av R. Dunlop fra sjikt MB49-04 fra -1,80 moh.
2) **kar** kanne av keramikk, leirgods, *var.* Merida type.
Trekantet bukskår av (olivenolje-)krukke fra Portugal eller Spania (Merida type). Kom fra dypere enn 14C-prøven BRM1045/1, og dermed er det veldig sannsynlig at skåret er fra høymiddelalderen -- ellers kan det dessverre være "forurensning" fra da naverboret ble trukket opp gjennom yngre sjikt.
*Vekt:* 5,5 gram.
*Datering:* Trolig middelaldersk
Funnet 26.3.2014 av R. Dunlop i sjikt MB49-04 på -2,10 moh.
*Funnomstendighet:* Arkeologisk registrering/forundersøkelse. Prøven kom fra naverboring for anleggelse av miljøbrønn MB49.
*Orienteringsoppgave:* Miljøbrønn MB49 ligger ved den sørvestre enden til svalgangen langs den nordvestre siden til Det Hanseatiske Museum.
*Kartreferanse/-koordinater: Projeksjon:* EU89-UTM; Sone 32, *N:* 6701155,65, *Ø:* 297588,85.
*Innberetning/litteratur:* A. R. Dunlop, , NIKU Oppdragsrapport 91/2014
*Funnet av:* Rory Dunlop, NIKU distriktskontor Bergen.
*Funnår:* 2014.
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