



NIKU Oppdragsrapport 271/2011

The Bryggen Monitoring Project, Part
12: report on the archaeological investi-
gation of two dipwell drillings, Brygge-
stredet and Bellgården, Bryggen, 2011

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Forord

Stiftelsen Bryggen takkes for hjelpen med tilrettelegging av undersøkelsesstedene.

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1 Sammendrag

Rapporten presenterer resultatene av den arkeologiske undersøkelsen av to naverboringer utført for anleggelsen av miljøbrønner MB38 og MB39 som en del av miljøovervåkingsprogrammet for verdensarvstedet Bryggen.

2 Introduction

In early May 2011 a new dipwell – designated MB39 – was installed in the firebreak street called Bryggestredet, and in the area formerly occupied by the Enhjørningsgården tenement's building 3f. The work was undertaken in connection with the general monitoring project in the Bryggen area, and with particular regard to the mapping/modelling of the hydrogeology and geochemical make-up of the central area, where preservation conditions are thought to be very good for the most part. The drilling of MB39 was timed to coincide with the installation of redox-measuring equipment by Michel Vorenhout and Zander Smit from the Netherlands (Vorenhout 2011).

MB38 was installed on October 24th 2011 at a point just a few metres to the southwest of the low building standing alone in the passageway between the Bellgården and Jacobsfjorden tenements (Bellgården/Jacobsfjorden building 6-7a). [It had originally been intended to install the two dipwells at the same time, but restoration work on one of the other buildings in the Bellgården tenement blocked access by the new drilling rig, so MB38 was postponed until a smaller drilling rig became available.]

Rory 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 dipwells, naturally with full archaeological investigation of the soil sequence in each of the boreholes; and
- b) to obtain soil and wood 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.

MB38 and MB39 come under NIKU project number 156132926. The work was funded in its entirety by *Riksantikvaren* (the Norwegian Directorate for Cultural Heritage).

3 Background information

The two new drillings were located in the central part of the Bryggen area, and one expected that both the state of preservation of the archaeological deposits and the preservation conditions would be very good for the most part. As for MB39, it was known that the establishment of the firebreak street called Bryggestredet would have entailed the removal of a certain thickness of the uppermost deposits – and so it turned out to be.

MB39 lies not very far to the east-northeast of dipwell MB23, where the total deposit thickness was about 6.5 metres (Dunlop 2008).

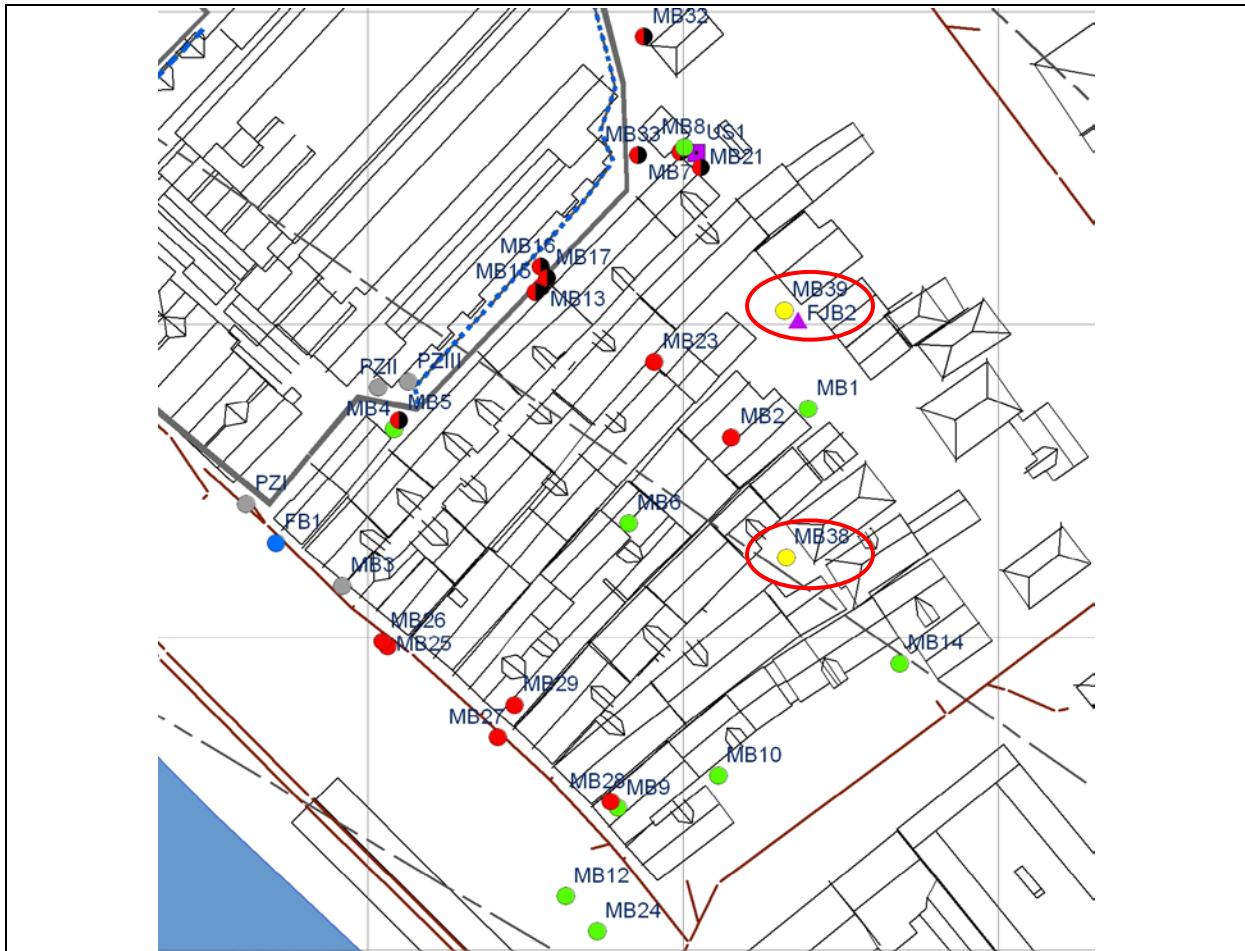


Fig. 1. Map showing positions of MB38 and MB39.

4 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 drill 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. Three ^{14}C -dating samples and a couple of small finds were collected, and these have been registered in accordance with the principles laid down by Bergen Museum’s *Middelaldersamlingen* (the Medieval Collections). One should note that each borehole has its own reference number for the purposes of finds recording: «BRM 960» for MB38; and «BRM 952» for MB39.

5 Description of the archaeological sequences in the boreholes

5.1 General remarks

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 “MB38-01” denotes the first archaeological stratum in dipwell MB38.

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

5.2 Drilling MB38: sediment sequence (visual inspection)

This hole was just a couple of metres to the southwest of the low building (Bellgården/Jacobsfjorden building 6-7a) that stands alone in the passageway between the Bellgården and Jacobsfjorden tenements. Multiconsult AS’s surveyors determined its coordinates as N6701314.83/E297516.33 (UTM EUREF 32N), and the modern planked surface was at an elevation of ca. 2.40 masl (datum NN1954). Weather conditions during the investigation were good.

Not much differentiation was observed in the strata – particularly the lower-lying ones – in comparison with other drillings. This may be partly a result of the fact that the drilling for dipwell MB38 was carried out by a new drill boss who had had no prior experience of drilling in organic cultural deposits.

The grey shading indicates the strata that are more or less spanned by the dipwell’s filter.

Masl		Stratum number	Same as stratum no.	Samples/ ¹⁴ C-dating/ finds	Accession number	Per-iod	PC	Description
From	To							
2.40	2.00	MB38-01				Mod	D0	Stones under planked passage-way surface
2.00	1.70	MB38-02				Post med	-	In situ firelayer: mostly red, sandy ash with some smallish pieces of charcoal Definitely represents the 1702-fire

Masl		Stratum number	Same as stratum no.	Samples/ ¹⁴ C-dating/ finds	Accession number	Period	PC	Description
From	To							
1.70	0.50	MB38-03		Samples: MB38-01 from 1.60 to 1.50 masl MB38-02 from 0.70 to 0.60 masl Treprøve 1 from 1.00 masl Sherd of medieval Grimston ware at 0.90 masl	960/1	Post med and med	B2 / C2	Semi-compact, dark-grey, sandy humus with some poorly preserved woodchips, sparse pieces of birch-bark, a handful of hazelnut shells, a couple of animal bones, some gravel, pebbles and small patches of clay; ca. 50% of the components were randomly inclined 1 leather strip at 1.25 masl (not retained) Medium H ₂ S odour No darkening Poor preservation Groundwater at ca. 1.43 masl (as measured 21.2.2012)
0.50	0.35	MB38-04				Med	C3	Laminated moss No odour No darkening Medium preservation
0.35	-0.35	MB38-05		Sample: MB38-03 from -0.25 to -0.35 masl (+ sample for freezer)		Med	C3	Semi-compact, dark-grey humus with a good deal of medium-well preserved woodchips, some twigs and roots, sparse pieces of birch-bark, a handful of hazelnut shells, a couple of small pockets of dung/straw, a few animal bones, some gravel and pebbles; ca. 75% of the components were parallel to the plane of deposition Medium H ₂ S odour No darkening Medium preservation
-0.35	-0.40	MB38-06				Med	-	Fine and medium-fine sand with a few small woodchips No odour No darkening Preservation indefinable

Masl		Stratum number	Same as stratum no.	Samples/ ¹⁴ C-dating/ finds	Accession number	Per-iod	PC	Description
From	To							
-0.40	-1.50	MB38-07		Samples: MB38-04 from -1.30 to -1.40 masl Treprøve 2 from -0.55 masl Treprøve 3 from -1.00 masl		Med	C3	Relatively loose, dark-grey humus (but not much humus in relation to total volume) with many medium-well preserved woodchips (mostly quite fresh in colour, but relatively easy to snap) and a few hazelnut shells with a lot of sand, some pebbles and smallish stones 50% organic, 50% mineral Medium H ₂ S odour No darkening Medium preservation
-1.50	-1.60	MB38-08				Med	C4	Timber Good preservation
-1.60	-1.95	MB38-09				Med	C3	Relatively loose, dark-grey humus (but not much humus in relation to total volume) with many medium-well preserved woodchips (mostly quite fresh in colour, but relatively easy to snap) and a few hazelnut shells with a lot of sand, some pebbles and smallish stones 50% organic, 50% mineral Medium H ₂ S odour No darkening Medium preservation

Masl		Stratum number	Same as stratum no.	Samples/ ¹⁴ C-dating/ finds	Accession number	Per-iod	PC	Description
From	To							
-1.95	> -3.60	MB38-10		Samples: MB38-05 from -2.30 to -2.40 masl (+ sample for freezer) MB38-06 from -2.80 to -2.90 masl MB38-07 from -3.30 to -3.40 masl Treprøve 4 from -2.25 masl Treprøve 5 from -2.35 masl Treprøve 6 from -3.45 masl ¹⁴ C-sample (hazelnut) from -3.45 masl AD 1275-1290	960/2	Med	C4	Semi-compact, grey/brown, highly organic stratum with a large quantity of well-preserved woodchips and wood pieces, quite a lot of moss and vegetable matter, a few thin pockets of dung/straw, numerous hazelnut shells and pieces of birch-bark, a couple of fragments of animal bone (well preserved), little humus and sand; most of the components were lying parallel to the plane of deposition 1 piece of wood-fibre rope at -2.05 masl (not retained) Thick pocket of reddish bog-myrtle at -2.15 masl Increasing quantity of sea-shell fragments from -2.35 masl and downwards Medium H ₂ S odour Slow darkening Good preservation
								Rotary drilling abandoned at ca. -3.60 masl (in order not to puncture the cultural deposits)
-4.70	-5.00							Somewhat stony, perhaps transition to beach deposit (info from drilling to bedrock)
-5.00	-7.60 (?)							Sand, probable beach/sea-bed (info from drilling to bedrock)
-7.60 (?)	-9.30							Probable moraine (info from drilling to bedrock)
-9.30								Bedrock

The archaeological deposits are somewhat in excess of 6.5 metres thick, which is much as expected in this part of Bryggen. Medieval deposits probably amounted to a thickness of about 6 metres. One firelayer was observed in the uppermost part of the sequence; this stratum (MB38-02) must represent the great fire of 1702.

5.3 Drilling MB39: sediment sequence (visual inspection)

This hole was in the firebreak street called Bryggestredet, and on the south-eastern edge of the area formerly occupied by the Enhjørningsgården tenement's building 3f. Multiconsult AS's surveyors determined its coordinates as N6701351.31/E297514.87 (UTM EUREF89 32N), and the modern cobbled surface was at an elevation of ca. 3.00 masl (datum NN1954). Weather conditions during the investigation were good.

The grey shading indicates the strata that are more or less spanned by the dipwell's filter.

Masl		Stratum number	Same as stratum no.	Samples/ ¹⁴ C-dating/ finds	Accession number	Per-iod	PC	Description
From	To							
3.00	2.85	MB39-01				Mod	-	Cobblestones
2.85	2.65	MB39-02				Mod	D0	Sand
2.65	2.15	MB39-03				Mod	D0	Grey, very stony sand and gravel, with a few pieces of brick/tile Deposited in connection with the establishment of Bryggestredet
2.15	2.10	MB39-04		Sample: MB39-01		Med	-	Possible disturbed firelayer Preservation indefinable
2.10	1.60	MB39-05		Samples: MB39-02 from 1.90 to 1.80 masl MB39-03 from 1.70 to 1.60 masl (+ sample for freezer) Treprøve 1 from 2.05 masl Treprøve 2 from 1.85 masl		Med	B3 / C3	Brown humus, quite homogeneous and compact, with quite a lot of woodchips and wood pieces (from poor to good preservation), a few hazelnut shells and small pieces of birch-bark, a couple of small pieces of animal bone (well preserved), a few small pieces of red brick/tile, a little sand and a few pebbles Medium H ₂ S odour Medium-fast darkening Medium preservation Groundwater at ca. 2.07 masl (as measured 21.2.2012)
1.60	1.50	MB39-06				Med	C3	Horizontal timber Noticeable odour of freshly cut pinewood Medium preservation
1.50	1.40	MB39-07				Med	C3	Brown humus, quite homogeneous and compact, with quite a lot of woodchips and wood pieces (from poor to good preservation), a few hazelnut shells and small pieces of birch-bark, a couple of small pieces of animal bone (well preserved), a few small pieces of red brick/tile, a little sand and a few pebbles Medium H ₂ S odour Medium-fast darkening Medium preservation

Masl		Stratum number	Same as stratum no.	Samples/ ¹⁴ C-dating/ finds	Accession number	Period	PC	Description
From	To							
1.40	0.55	MB39-08		Samples: Treprøve 3 from 1.40 masl Treprøve 4 from 0.70 to 0.60 masl		Med	C3	Probably mostly timbers one on top of the other (quite chewed up by the auger) with some humus/woodchip matrix in between A large fragment of red brick at 0.70 masl (not retained) Somewhat "sourish" odour, with a hint of diesel From poor to good preservation
0.55	0.35	MB39-09		Sample: MB39-04		Med	C3	Dark-grey/brown, compact humus with a few woodchips and small pieces of birch-bark (most parallel to plane of deposition), and quite a lot of fine/medium-fine sand Weak H ₂ S odour No darkening Medium preservation
0.35	0.05	MB39-10		Sample: MB39-05 from 0.30 to 0.10 masl		Med	C3	"Unstructured", quite loose, brown, highly organic stratum with humus, a large quantity of woodchips and sawchips, a few hazelnut shells, a couple of fragments of animal bone, very little sand; most components were lying at random inclination angles A piece of possible quernstone (garnet-mica-schist) at 0.15 masl (not retained) Medium H ₂ S odour Slow darkening Medium preservation
0.05	-0,45	MB39-11		Sample: MB39-06 from -0.30 to -0.40 masl Sherd of medi- eval earthen- ware from -0.40 masl	952/1	Med	C4	(No uncontaminated soil on auger from 0 to -0.20 masl) Well-preserved, laminated moss with a few woodchips (well preserved and parallel to plane of deposition) Medium H ₂ S odour Medium-fast darkening Good preservation

Masl		Stratum number	Same as stratum no.	Samples/ ¹⁴ C-dating/ finds	Accession number	Per- iod	PC	Description
From	To							
-0.45	-0.85	MB39-12		Samples: MB39-07 from -0.55 to -0.65 masl (+ sample for freezer) Treprøve 5 from -0.50 masl Treprøve 6 from -0.80 masl ¹⁴ C-sample (hazelnuts) from -0.70 masl AD 1035-1165	952/2	Med	C4	Compact, brown, highly organic stratum with a large quantity of woodchips and wood pieces, quite a lot of moss and vegetable matter, a few hazelnut shells and pieces of birch-bark, a couple of fragments of animal bone (well preserved), very little humus and sand; about half of the components were lying at random inclination angles Strong H ₂ S odour Slow darkening Good preservation
-0.85	-1.85	MB39-13		Sample: MB39-08 from -1.50 to -1.65 masl		Med	C2	(Mostly contaminated soil from -1.00 to -1.20 masl) Dark-grey, semi-compact sand with numerous small stones and pebbles, a few woodchips and small pieces of birch-bark, some turf with roots, and very little humus; most components were lying at random inclination angles Weak H ₂ S odour No darkening Poor preservation
-1.85	-2.10	MB39-14		Sample: MB39-09 from -1.85 to -2.00 masl		Med	C4	Compact, brown, highly organic stratum with a large quantity of woodchips and wood pieces, quite a lot of moss and vegetable matter, a few hazelnut shells and pieces of birch-bark, a couple of fragments of animal bone (well preserved), very little humus and sand; about half of the components were lying at random inclination angles Strong H ₂ S odour Slow darkening Good preservation

Masl		Stratum number	Same as stratum no.	Samples/ ¹⁴ C-dating/ finds	Accession number	Period	PC	Description
From	To							
-2.10	-2.45	MB39-15		Sample: MB39-10 from -2.20 to -2.30 masl		Med	C2	Dark-grey, semi-compact sand with numerous small stones and pebbles, a few woodchips and small pieces of birch-bark, some turf with roots, and very little humus; most components were lying at random inclination angles Weak H ₂ S odour No darkening Poor preservation
-2.45	> -3.00	MB39-16		Samples: MB39-11 from -2.80 to -2.90 masl Treprøve 7 from -2.80 masl ¹⁴ C-sample (hazelnuts) from -2.85 masl AD 1055-1185	952/3	Med	C5	Compact, brown, highly organic stratum with a great deal of mostly laminated moss, numerous woodchips and wood pieces, quite a lot of vegetable matter, numerous hazelnut shells, some pieces of birch-bark, very little humus and sand; most components were lying parallel to plane of deposition Strong H ₂ S odour Slow darkening Excellent preservation
								Rotary drilling abandoned at -3.00 masl (in order not to puncture the very well-preserved deposits)
-4.00 (ca.)	-6.15 (ca.)							Sand (info from drilling to bedrock)
-6.15 (ca.)	-6.65 (ca.)							Moraine (info from drilling to bedrock)
-6.65 (ca.)								Bedrock

The archaeological deposits are a little in excess of 6 metres thick, which is perhaps somewhat thicker than might have been expected in this area. All of the cultural deposits are from the Middle Ages. There was one possible firelayer situated near the top of the sequence (stratum MB39-04 – see report section 5.3 for a discussion of this stratum's likely dating).

6 Finds & Dating

6.1 MB38

6.1.1 Archaeological material

One sherd of medieval Grimston ware (accession nos. 960/1) was recovered from stratum MB38-03, from around 0.90 masl.

6.1.2 Radiometric dating

One sample was taken for ^{14}C -dating. A hazelnut (accession no. 960/2) from -3.45 masl in stratum MB38-10 was dated to 740 ± 35 BP, calibrated to AD 1275-1290.

6.2 MB39

6.2.1 Archaeological material

One sherd of high-medieval earthenware (accession no. 952/1) was recovered from stratum MB39-11 at -0.40 masl.

6.2.2 Radiometric dating

Two samples were taken for ^{14}C -dating. Hazelnuts (accession no. 952/2) from -0.70 masl in stratum MB39-12 were dated to 930 ± 25 BP, calibrated to AD 1035-1165. Hazelnuts (accession no. 952/3) from -2.85 masl in stratum MB39-16 were dated to 905 ± 30 BP, calibrated to AD 1050-1185.

Here, dating of the sample from the stratigraphically younger stratum has yielded a result that is slightly older than that from the stratigraphically older stratum, somewhat surprisingly since there seems to be no question of contamination during the sampling process. There is, however, some suggestion that the younger stratum, MB39-12, consists at least partly of redeposited material, which could easily derive from the early medieval period. And one may note that the overlying stratum MB39-11 contained a sherd of earthenware from the high medieval, not the early medieval period. Under the circumstances it is wisest to disregard the ^{14}C -dating from stratum MB39-12.

6.3 Dating: conclusions

The firelayer stratum MB38-02 must represent the major fire of 1702.

In the case of MB38 it is not easy to tell at exactly what level the transition from post-medieval to medieval deposits takes place. A sherd of medieval Grimston-ware was found at 0.90 masl in stratum MB38-03, but this stratum continues all the way up 1.70 masl – and is overlain by firelayer stratum MB38-02, dated to 1702. It is therefore likely that the upper part of stratum MB38-03 would have been deposited in the course of post-medieval times, despite the fact that no pieces of brick/tile were observed in this stratum (brick/tile is almost always associated with the post-medieval period, at least where Bergen is concerned). We might tentatively suggest that the transition from post-medieval to medieval deposits takes place at ca. 1.00 masl in MB38.

The result of the ^{14}C -dating from stratum MB38-10 is perhaps somewhat younger than one might expect at this depth, but at least it lies squarely in the high medieval period rather than the late medieval.

Regarding MB39, a piece of brick was found as far down as 0.70 masl (stratum MB39-08). In Bergen at least, brick is taken to be primarily post-medieval in origin – but in this case we can be quite certain that we are dealing with a medieval context all the same. This is because the excavation in 2010 of a small pit quite close to MB39 revealed that the transition to medieval deposits takes place at ca. 2.50 masl in this immediate area (Dunlop 2010).

The possible firelayer stratum MB39-04 probably corresponds to the fire of either 1476 or 1413.

As for the two ¹⁴C-datings from MB39, the deeper one is certainly within the dating range that one would expect at this depth – that is to say, the early medieval period. This strongly suggests that stratum MB39-16 belongs to one of the earliest phases of the infilling of the original harbour area.

7 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 satisfactory. There are, however, three things that can be discussed:

- comparing MB38 and MB14, one can observe that the deposits from ca. 0 masl to -2.0 masl in MB38 generally display only a medium state of preservation, while the deposits at a corresponding elevation in MB14 were assessed as well preserved – the question is, is something untoward taking place at this depth in MB38?
- again comparing MB38 and MB14, one observes an apparent absence of deposits displaying an excellent state of preservation in MB38; however, it is quite possible that such deposits are present in the nethermost metre, which was not investigated
- as for MB39, there were two strata – one of them as much as 1 metre thick – displaying poor preservation which were located towards the bottom of the sequence (and thus well below the groundwater-level); the only reasonable explanation for this finding is that the deposits in question must contain material that had become badly decomposed prior to deposition

Table 1. Schematic comparative presentation of state of preservation (archaeological assessment) of the deposits in MB38 and MB39; MB14 is also shown for purposes of comparison with MB38, and MB23 for MB39 (though MB23 is, strictly speaking, probably not directly comparable to MB39). 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 dipwells’ filter.

MB38	MB14 (2005)	MB39	MB23 (2006)	Masl
§§		§§§§§		3.0 – 2.0
?XXXX	?XXXX	XXXXX	?????	2.0 – 1.0
XXXXX	XX???	XXXXX	?XXXX	1.0 – 0.0
XXXXX	?XXXX	XXXXX	XXXXX	0.0 – -1.0
XXXXX	XXXXX	XXXXX	XXXX0	-1.0 – -2.0
XXXXX	XXXXX	XXXXX	XXXXX	-2.0 – -3.0
XXX00	XXXXX	00000	XXXXX	-3.0 – -4.0
0000N	N	NNNNN	XXXXX	-4.0 – -5.0
NNNNN		NNNNN	XXXN	-5.0 – -6.0
NNNNN		NNNF		-6.0 – -7.0
NNNNN				-7.0 – -8.0
NNNNN				-8.0 – -9.0
NF				-9.0 – -10.0

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

All in all, the prognosis for most of the organic deposits would seem to be good.

8 Concluding remarks

It is not easy to be certain about the archaeological context of deposits found in boreholes, but some interpretations can be offered.

In MB38, it is very likely that the strata down to and including MB38-06 are located within buildings, while the strata below MB38-06 must be connected with the reclamation of land from the sea as the settlement expanded into the former harbour area during the medieval period.

In MB39, it is virtually certain that the strata from MB39-04 and down to either MB39-09 or MB39-10 are located within buildings, while the underlying strata must be connected with the reclamation of land from the sea as the settlement expanded into the former harbour area during the medieval period.

9 References

- Dunlop, A. R., 2008. The Bryggen Monitoring Project, Part 6: report on the archaeological investigation of three dipwell boreholes, Bryggen, 2006. – NIKU Arkeologi avdeling, Arkivrapport 63-2008. NIKU distriktskontor Bergen.
- Dunlop, A. R., 2010. Bryggestredet, Bryggen, Bergen; Arkeologisk utgraving av hull for fettavskiller, 2010. – NIKU Oppdragsrapport 34/2010.

10 Documentation (NIKU)

- Sequences noted down in *Boreprøvebok* (drilling logbook) 6 and in NIKU's FEDOBA
- 33 digital photos (17 for MB38, 16 for MB39)
- Finds/samples information entered into *Gjenstandsbasen, Bergen Museum*

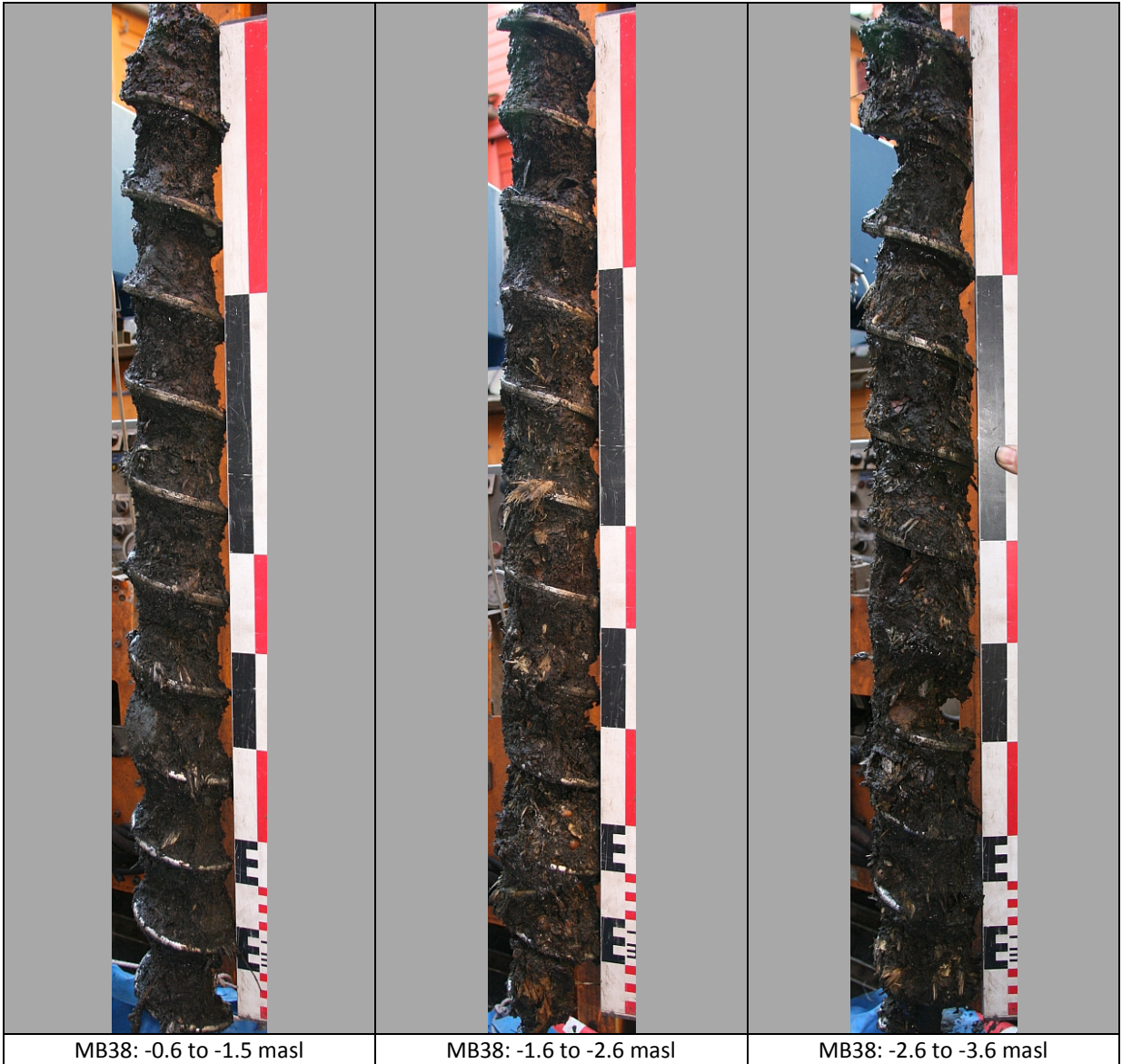
NIKU prosjektnummer	156132926 (2011)
Berørt område	Bryggen: Enhjørningsgården, Bellgården
Gnr/Bnr	167/1536, 167/1621
Oppdragets art	Arkeologisk undersøkelse av grunnboringer
Vedtaksdato; saksnummer	-; 06/02802

Oppdragsgiver	Riksantikvaren Distriktskontor Vest
Oppdraget utført av	NIKU distriktskontor Bergen v/ R. Dunlop
Oppdraget utført dato	4.5. og 24.11.2011
Koordinater	Se i teksten
Overflate, dagens	Se i teksten
Tilstedeværelse av automatisk fredete kulturminner	Ja
Kulturhistorisk tolkning	Fyllmasser, tømmerstokker, bosetningslag, utfyllingslag

Photo list

Bilde nr.	Undersøkelsestype	Motiv
niku_ark_102303	MOV brønnboring (naver)	MB39 lengden 3,0 til 2,0 moh
niku_ark_102304	MOV brønnboring (naver)	MB39 lengden 2,0 til 1,0 moh
niku_ark_102305	MOV brønnboring (naver)	MB39 lengden 2,0 til 1,5 moh
niku_ark_102306	MOV brønnboring (naver)	MB39 lengden 1,5 til 1,0 moh
niku_ark_102307	MOV brønnboring (naver)	MB39 lengden 1,0 til 0 moh
niku_ark_102308	MOV brønnboring (naver)	MB39 lengden 1,0 til 0,5 moh
niku_ark_102309	MOV brønnboring (naver)	MB39 lengden 0,5 til 0 moh
niku_ark_102310	MOV brønnboring (naver)	MB39 lengden 0 til -1,0 moh
niku_ark_102311	MOV brønnboring (naver)	MB39 lengden 0 til -0,5 moh
niku_ark_102312	MOV brønnboring (naver)	MB39 lengden -0,5 til -1,0 moh
niku_ark_102313	MOV brønnboring (naver)	MB39 lengden -1,0 til -2,0 moh
niku_ark_102314	MOV brønnboring (naver)	MB39 lengden -1,0 til -1,5 moh
niku_ark_102315	MOV brønnboring (naver)	MB39 lengden -1,5 til -2,0 moh
niku_ark_102316	MOV brønnboring (naver)	MB39 lengden -2,0 til -3,0 moh
niku_ark_102317	MOV brønnboring (naver)	MB39 lengden -2,0 til -2,5 moh
niku_ark_102318	MOV brønnboring (naver)	MB39 lengden -2,5 til -3,0 moh
niku_ark_102870	MOV brønnboring (naver)	MB38: lengde 2,4 til 1,4 moh
niku_ark_102871	MOV brønnboring (naver)	MB38: lengde 2,0 til 1,7 moh
niku_ark_102872	MOV brønnboring (naver)	MB38: lengde 1,4 til 0,4 moh
niku_ark_102873	MOV brønnboring (naver)	MB38: lengde 0,9 til 0,4 moh
niku_ark_102874	MOV brønnboring (naver)	MB38: lengde 0,4 til -0,6 moh
niku_ark_102875	MOV brønnboring (naver)	MB38: lengde 0,4 til -0,1 moh
niku_ark_102876	MOV brønnboring (naver)	MB38: lengde -0,1 til -0,6 moh
niku_ark_102877	MOV brønnboring (naver)	MB38: Arbeidsbilde, boremaskin/boreleder
niku_ark_102878	MOV brønnboring (naver)	MB38: lengde -0,6 til -1,5 moh
niku_ark_102879	MOV brønnboring (naver)	MB38: lengde -0,6 til -1,15 moh
niku_ark_102880	MOV brønnboring (naver)	MB38: lengde -0,95 til -1,5 moh
niku_ark_102881	MOV brønnboring (naver)	MB38: lengde -1,6 til -2,6 moh
niku_ark_102882	MOV brønnboring (naver)	MB38: lengde -1,6 til -2,1 moh
niku_ark_102883	MOV brønnboring (naver)	MB38: lengde -2,1 til -2,6 moh
niku_ark_102884	MOV brønnboring (naver)	MB38: lengde -2,6 til -3,6 moh
niku_ark_102885	MOV brønnboring (naver)	MB38: lengde -2,6 til -3,1 moh
niku_ark_102886	MOV brønnboring (naver)	MB38: lengde -3,1 til -3,6 moh





BRM952 /1-3

Byfunn fra **middelalder/nyere tid** fra BRYGGESTREDET, BRYGGEN (167/153), BERGEN K., HORDALAND:

(vis tilveksten)

1) **kar** (kokekar) av leirgods/keramikk. *Gjenstandsdel:* Bukskår. *Antall fragmenter:* 1. Trekantet bukskår av høymiddelaldersk leirgods (ukjent produksjonssted). Funnet 4.5.2011 i sjikt MB39-11 i en dybde av -0,40 moh.

Vekt: 5 gram.

Datering: Høymiddelaldersk

2) **prøve, annet** av hasselnøtt.

Hasselnøttskall til 14C-datering (DF-4360, TRa-2874); datert til 930±25 BP, kalibrert til AD 1035-1165. Det må være tale om redeponert eldre materiale (jf. dateringen til BRM952/3, som er fra en kontekst som ligger en god del lavere). Funnet 4.5.2011 i sjikt MB39-12 i en dybde av -0,70 moh.

Datering: AD 1035-1165

3) **prøve, annet** av hasselnøtt.

Hasselnøttskall til 14C-datering (DF-4360, TRa-2875); datert til 905±30 BP, kalibrert til AD 1050-1185. Funnet 4.5.2011 i sjikt MB39-16 i en dybde av -2,85 moh.

Datering: AD 1050-1185

Funnomstendighet: Arkeologisk registrering/forundersøkelse. Funn og prøver kom fra naverboring for miljøbrønn MB39.

Orienteringsoppgave: Borepunktet for miljøbrønn MB39 ligger i Bryggestredet noen meter sørvest for det søndre hjørnet til Enhjørningsgårdens bygning 3g.

Kartreferanse/-koordinater:

Projeksjon: EU89-UTM; Sone 32, N: 6701351,31, Ø: 297514,87.

Innberetning/litteratur: A. R. Dunlop, 30.12.2011, The Bryggen Monitoring Project, Part 12: report on the archaeological investigation of two dipwell boreholes, Bryggestredet and Bellgården, Bryggen, 2011. - NIKU Oppdragsrapport 271/2011.

Funnet av: Rory Dunlop, NIKU distriktskontor Bergen.

Funnår: 2011.

Katalogisert av: Rory Dunlop.

BRM960 /1-2

Byfunn fra **middelalder/nyere tid** fra BREDSGÅRDEN/JACOBSEFJORDEN, BRYGGEN (167/162), BERGEN K., HORDALAND:

[\(vis tilveksten\)](#)

1) **kar** (kanne) av leirgods/keramikk, var. Grimston. *Gjenstandsdel:* Bukskår. *Antall fragmenter:* 1.

Uregelmessig kvadratisk bukskår av middelaldersk Grimston-keramikk. Funnet i sjikt MB38-03 på 0,90 moh.

Vekt: 7 gram.

Datering: Middelaldersk

2) **prøve, annet** av hasselnøtt.

Hasselnøttskall til 14C-datering (DF-4360, TRa-3404); datert til 740±35 BP, kalibrert til AD 1275-1290. Funnet 24.10.2011 i sjikt MB38-10 i en dybde av -3,45 moh.

Datering: AD 1275-1290

Funnomstendighet: Arkeologisk registrering/forundersøkelse. Funn og prøver kom fra naverboring for miljøbrønn MB38.

Orienteringsoppgave: Borepunktet for miljøbrønn MB38 ligger i passasjen mellom Bellgården og Jacobsfjorden, og et par meter sørvest for den lave bygningen (Bellgården/Jacobsfjorden building 6-7a) som ligger midt i passasjen.

Kartreferanse/-koordinater:

Projeksjon: EU89-UTM; Sone 32, N: 6701314,83, Ø: 297516,33.

Innberetning/litteratur: A. R. Dunlop, 30.12.2011, The Bryggen Monitoring Project, Part 12: report on the archaeological investigation of two dipwell boreholes, Bryggestredet and Bellgården, Bryggen, 2011. - NIKU Oppdragsrapport 271/2011.

Funnet av: Rory Dunlop, NIKU distriktskontor Bergen.

Funnår: 2011.

Katalogisert av: Rory Dunlop.