....
Szkoła Data

ZADANIE PROJEKTOWE NR 1

Fundamentowanie

PROJEKT POSADOWIENIA BEZPOŚREDNIEGO

....
Numer tematu Imię i nazwisko rok/semestr/grupa

W oparciu o załączone wyniki badań laboratoryjnych zaprojektować posadowienie bezpośrednie obiektu budowlanego na stopach fundamentowych dla podanych niżej danych:

- głębokość przemarzania: h_z = ...[m]
- głębokość drugiej warstwy gruntu: h_1 = ...[m]
- wartość charakterystyczne obciążeń:

Obciążenie	Pionowe	Poziome	Moment
Stałe	V_{Gk} = ... kN	H_{GkB} = ... kN	M_{GkB} = ... kNm
Zmienne	V_{Qk} = ... kN	H_{QkB} = ... kN	M_{QkB} = ... kNm
Wyjątkowe	V_{Ak} = ... kN	H_{AkB} = ... kN	M_{AkB} = ... kNm

- numer stopy obliczeniowej: 5
- rozstaw osi słupów: l_x = ...[m], l_y = ...[m]

Po wyznaczeniu osiadania stopy obliczeniowej, przyjąć osiadania pozostałych stóp wg formuły: $s_i = s_5 \times k_i$; i = 1..9, gdzie:
k_i = 0.9, 0.8, 0.65, 0.95, 0.7, 0.85, 0.9, 0.85 (k_5 = 1.0)

Projekt powinien zawierać:

1. Zwymiarowanie stopy obliczeniowej wg warunków I stanu granicznego nośności GEO i STR
2. Sprawdzenie warunków II stanu granicznego użytkowalności
3. Charakterystyczne przekroje i rzuty zwymiarowanej stopy obliczeniowej

Termin oddania projektu: ..... **2012r.**

Podpis studenta : .....

Podpis prowadzącego (dr inż. Piotr Srokosz): .....

DANE DO PROJEKTU POSADOWIENIA

Część 1. Geometria i obciążenia

Temat	Rozstaw osi a × b [m]	Głębok. przemar. [m]	Charakterystyczne wartości obciążeń [kN] [kNm]								
			V_{Gk}	V_{Qk}	V_{Ak}	H_{GkB}	H_{QkB}	H_{AkB}	M_{GkB}	$M_{Qk\,B}$	M_{AkB}
1	6 × 6	0.80	967	101	41	100	55	3	0	40	4
2	9 × 6	1.00	632	70	8	45	50	4	18	33	13
3	6 × 6	0.80	580	43	20	65	63	0	16	5	1
4	9 × 6	1.20	936	58	26	50	26	9	20	11	5
5	6 × 6	0.80	619	70	36	77	35	9	9	49	13
6	9 × 6	1.40	823	26	28	97	23	3	7	98	6
7	6 × 6	1.00	983	93	23	84	12	6	12	104	6
8	9 × 6	0.80	832	106	22	77	15	2	9	3	14
9	6 × 6	1.20	935	70	4	39	61	6	20	87	19
10	9 × 6	0.80	505	13	22	37	30	3	28	102	3
11	6 × 6	1.40	569	91	18	31	38	7	10	87	1
12	9 × 6	1.00	909	71	15	50	65	9	17	115	3
13	6 × 6	0.80	715	80	43	87	24	6	4	79	3
14	9 × 6	1.40	945	19	38	99	62	10	5	89	18
15	6 × 6	0.80	867	52	47	31	49	8	8	41	3
16	9 × 6	1.40	844	48	28	87	63	2	17	106	12
17	6 × 6	1.20	673	27	1	73	39	8	15	42	5
18	9 × 6	0.80	583	93	30	69	70	2	29	7	4
19	6 × 6	1.00	578	94	41	47	32	6	7	86	14
20	9 × 6	0.80	596	55	49	88	42	7	14	115	11
21	6 × 6	0.80	711	106	11	48	21	8	16	19	19
22	9 × 6	1.00	928	25	35	83	40	4	24	50	7
23	6 × 6	0.80	745	97	26	76	35	4	6	11	14
24	9 × 6	0.80	908	87	47	45	50	5	27	54	19
25	6 × 6	1.20	730	54	36	72	50	6	28	104	12
26	9 × 6	0.80	729	72	11	72	67	2	0	47	18
27	6 × 6	1.20	725	105	22	76	22	0	23	30	15
28	9 × 6	0.80	706	74	9	43	17	8	28	43	8
29	6 × 6	1.40	951	35	48	75	44	5	24	89	15
30	9 × 6	0.80	503	45	18	42	68	2	28	78	3
31	6 × 6	1.40	649	29	2	68	11	1	6	113	19
32	9 × 6	1.20	525	59	38	74	62	2	20	100	4
33	6 × 6	1.00	847	51	45	78	12	4	28	56	16
34	9 × 6	0.80	825	56	14	77	41	4	10	76	12
35	6 × 6	1.20	991	71	13	91	22	1	18	7	3
36	9 × 6	1.00	776	17	47	31	53	9	18	65	1
37	6 × 6	1.20	700	41	7	52	25	1	0	55	6
38	9 × 6	1.00	599	71	47	85	66	4	29	104	19
39	6 × 6	0.80	813	28	35	52	18	3	27	103	19
40	9 × 6	1.40	867	72	42	95	41	2	21	57	5
41	6 × 6	1.00	688	35	10	78	64	9	13	94	19
42	9 × 6	1.20	505	69	23	35	67	3	21	79	14
43	6 × 6	0.80	710	61	4	35	30	7	18	0	1

44	9 × 6	1.20	877	56	43	31	36	4	9	16	12
45	6 × 6	0.80	897	64	28	46	38	4	26	59	8
46	9 × 6	1.20	960	104	16	66	19	5	3	5	4
47	6 × 6	1.00	922	44	19	62	18	2	9	27	4
48	9 × 6	0.80	684	50	43	79	42	5	3	39	2
49	9 × 6	1.40	810	41	19	71	54	6	12	108	0
50	6 × 6	0.80	866	51	4	66	34	0	10	38	16
51	9 × 6	1.20	597	39	10	35	32	8	28	30	0
52	6 × 6	0.80	952	49	2	44	27	8	25	52	18
53	9 × 6	0.80	785	60	28	57	62	7	8	101	7
54	6 × 6	0.80	816	82	6	49	48	5	1	22	14
55	9 × 6	1.00	617	41	26	84	24	1	0	61	19
56	6 × 6	1.00	774	21	6	52	69	8	17	54	3
57	9 × 6	0.80	966	54	38	75	48	2	22	39	3
58	6 × 6	1.40	668	57	19	99	24	4	24	46	6
59	9 × 6	1.20	828	11	41	65	51	0	19	106	1
60	6 × 6	0.80	696	76	2	96	50	3	8	91	7
61	9 × 6	0.80	814	82	30	88	18	9	4	106	1
62	6 × 6	1.20	850	38	47	94	11	8	20	55	16
63	9 × 6	1.00	699	36	14	38	26	3	28	96	20
64	6 × 6	1.00	707	81	44	87	17	9	24	16	2
65	9 × 6	0.80	828	88	5	94	14	5	28	8	12
66	6 × 6	0.80	919	109	3	41	61	6	9	45	3
67	9 × 6	0.80	686	57	12	39	21	6	8	45	6
68	6 × 6	1.00	713	100	47	83	12	7	16	58	3
69	9 × 6	0.80	797	55	3	81	54	6	5	116	4
70	6 × 6	1.20	783	90	13	76	42	7	6	41	8

DANE DO PROJEKTU POSADOWIENIA

Część 2. Wyniki badań laboratoryjnych

Temat	Przelot warstwy [m]	Rodzaj gruntu	γ_k, γ'_k [kN/m^3]	Φ'_k [°]	c'_k [kPa]	c_{uk} [kPa]
1	0.0 – 3.3 3.3 – 10.0	sisaCl MSa	20.2 18.4	20.3 34.4	32.8 0	78.2 –
2	0.0 – 3.0 3.0 – 10.0	siCl Sa	21.1 17.3	10.6 31.7	46.5 0	110.3 –
3	0.0 – 3.5 3.5 – 10.0	saCl FSa	22.5 16.3	11.4 30.3	42.3 0	85.2 –
4	0.0 – 3.8 3.8 – 10.0	sasiCl Gr	20.7 19.6	17.2 39.6	34.5 0	74.4 –
5	0.0 – 3.1 3.1 – 10.0	Cl siSa	22.3 17.7	12.7 32.8	58.7 0	120.5 –
6	0.0 – 3.2 3.2 – 10.0	sisaCl Sa	20.7 17.3	18.3 35.4	35.4 0	76.7 –
7	0.0 – 2.9 2.9 – 10.0	Si MSa	21.6 18.4	20.6 36.4	28.8 0	68.8 –
8	0.0 – 2.2 2.2 – 10.0	saSi saGr	22.5 20.9	19.7 40.9	26.6 0	89.9 –
9	0.0 – 2.6 2.6 – 10.0	sisaCl MSa	21.2 18.1	22.2 33.4	34.4 0	81.3 –
10	0.0 – 2.1 2.1 – 10.0	siCl siSa	22.3 17.5	14.3 35.6	42.3 0	76.2 –
11	0.0 – 2.7 2.7 – 10.0	saCl FSa	22.3 16.7	12.8 31.6	40.8 0	86.1 –
12	0.0 – 2.0 2.0 – 10.0	siCl Sa	21.3 17.8	10.5 31.4	46.9 0	110.7 –
13	0.0 – 2.8 2.8 – 10.0	Si MSa	22.4 16.5	11.2 30.1	42.0 0	85.8 –
14	0.0 – 2.5 2.5 – 10.0	clSi FSa	20.6 19.7	17.0 39.4	34.2 0	74.9 –
15	0.0 – 2.4 2.4 – 10.0	saSi Sa	22.2 17.1	12.9 32.3	58.1 0	120.3 –
16	0.0 – 2.1 2.1 – 10.0	Cl MSa	20.6 17.8	18.2 35.2	35.5 0	76.5 –
17	0.0 – 1.9 1.9 – 10.0	siCl Gr	21.4 18.3	20.9 36.9	28.4 0	98.7 –
18	0.0 – 2.9 2.9 – 10.0	clSi saGr	22.2 20.1	19.2 40.4	26.6 0	75.8 –
19	0.0 – 3.0 3.0 – 10.0	siCl MSa	21.0 18.8	22.2 33.4	34.8 0	81.9 –
20	0.0 – 3.3 3.3 – 10.0	sisaCl FSa	22.2 17.4	14.6 35.4	42.3 0	76.2 –
21	0.0 – 3.0 3.0 – 10.0	sisaCl MSa	21.2 17.3	20.3 34.1	32.7 0	78.5 –
22	0.0 – 3.5 3.5 – 10.0	siCl Sa	20.6 18.8	17.8 34.0	46.6 0	98.6 –

23	0.0 – 3.8 3.8 – 10.0	saCl FSa	22.7 16.2	11.9 30.4	42.3 0	85.9 –
24	0.0 – 3.1 3.1 – 10.0	sasiCl Gr	20.4 19.6	17.6 39.7	34.5 0	74.9 –
25	0.0 – 3.2 3.2 – 10.0	Cl siSa	22.3 17.7	12.3 32.4	58.6 0	120.1 –
26	0.0 – 2.9 2.9 – 10.0	sisaCl Sa	20.4 17.2	18.6 35.7	35.7 0	76.9 –
27	0.0 – 2.2 2.2 – 10.0	Si MSa	21.1 18.8	20.8 36.8	28.9 0	88.4 –
28	0.0 – 2.6 2.6 – 10.0	saSi saGr	22.6 20.0	19.9 40.0	26.0 0	85.6 –
29	0.0 – 2.1 2.1 – 10.0	sisaCl MSa	21.3 18.2	22.2 33.4	34.3 0	81.9 –
30	0.0 – 2.7 2.7 – 10.0	siCl siSa	22.1 17.2	14.5 35.7	42.2 0	76.9 –
31	0.0 – 2.0 2.0 – 10.0	saCl FSa	22.5 16.3	12.6 31.3	40.2 0	86.9 –
32	0.0 – 2.8 2.8 – 10.0	siCl Sa	21.7 17.4	10.2 31.4	46.1 0	110.0 –
33	0.0 – 2.5 2.5 – 10.0	Si MSa	22.3 16.3	11.3 30.2	42.4 0	85.5 –
34	0.0 – 2.4 2.4 – 10.0	clSi FSa	20.8 19.6	17.1 39.1	34.5 0	74.9 –
35	0.0 – 2.1 2.1 – 10.0	saSi Sa	22.6 17.8	12.6 32.7	58.6 0	120.1 –
36	0.0 – 1.9 1.9 – 10.0	Cl MSa	20.9 17.5	18.7 35.7	35.7 0	76.7 –
37	0.0 – 2.9 2.9 – 10.0	siCl Gr	21.4 18.2	20.8 36.3	28.8 0	98.5 –
38	0.0 – 3.0 3.0 – 10.0	clSi saGr	22.4 20.6	19.4 40.5	26.9 0	75.4 –
39	0.0 – 3.3 3.3 – 10.0	siCl MSa	21.2 18.4	22.6 33.7	34.0 0	81.5 –
40	0.0 – 3.0 3.0 – 10.0	sisaCl FSa	22.5 17.7	14.3 35.2	42.3 0	96.8 –
41	0.0 – 3.5 3.5 – 10.0	sisaCl MSa	20.8 18.9	20.4 34.6	32.4 0	78.3 –
42	0.0 – 3.8 3.8 – 10.0	siCl Sa	21.3 17.2	10.7 31.8	46.6 0	110.2 –
43	0.0 – 3.1 3.1 – 10.0	saCl FSa	22.4 16.6	11.3 30.2	42.6 0	95.4 –
44	0.0 – 3.2 3.2 – 10.0	sasiCl Gr	20.5 19.3	17.1 39.3	34.7 0	84.6 –
45	0.0 – 2.9 2.9 – 10.0	Cl siSa	22.5 17.7	12.4 32.5	58.8 0	120.3 –
46	0.0 – 2.2 2.2 – 10.0	sisaCl Sa	20.5 17.6	18.6 35.7	35.5 0	86.4 –
47	0.0 – 2.6 2.6 – 10.0	Si MSa	21.8 18.6	20.8 36.9	28.3 0	88.3 –

48	0.0 – 2.1 2.1 – 10.0	saSi saGr	22.3 20.4	19.4 40.5	26.4 0	75.5 –
49	0.0 – 2.7 2.7 – 10.0	sisaCl MSa	21.5 18.7	22.6 33.7	34.5 0	81.3 –
50	0.0 – 2.0 2.0 – 10.0	siCl siSa	22.2 17.4	14.2 35.4	42.6 0	76.5 –
51	0.0 – 2.8 2.8 – 10.0	saCl FSa	20.2 18.6	20.7 34.8	32.7 0	78.7 –
52	0.0 – 2.5 2.5 – 10.0	siCl Sa	21.8 17.5	10.9 31.3	46.8 0	110.1 –
53	0.0 – 2.4 2.4 – 10.0	Si MSa	22.8 16.4	11.2 30.5	42.2 0	85.3 –
54	0.0 – 2.1 2.1 – 10.0	clSi FSa	20.8 19.4	17.8 39.5	34.3 0	74.5 –
55	0.0 – 1.9 1.9 – 10.0	saSi Sa	22.8 17.3	12.8 32.3	58.4 0	120.7 –
56	0.0 – 2.9 2.9 – 10.0	Cl MSa	20.8 17.4	18.2 35.6	35.5 0	76.8 –
57	0.0 – 3.0 3.0 – 10.0	siCl Gr	21.8 18.9	20.8 36.3	28.6 0	88.4 –
58	0.0 – 2.1 2.1 – 10.0	clSi saGr	22.3 20.5	19.7 40.2	26.9 0	75.3 –
59	0.0 – 1.8 1.8 – 10.0	siCl MSa	21.7 18.9	22.6 33.3	34.4 0	81.2 –
60	0.0 – 3.0 3.0 – 10.0	sisaCl FSa	22.3 17.2	14.7 35.3	42.3 0	76.8 –
61	0.0 – 3.5 3.5 – 10.0	siCl siSa	22.7 16.9	12.6 31.8	40.2 0	86.7 –
62	0.0 – 3.8 3.8 – 10.0	saCl FSa	21.3 17.4	10.5 31.4	46.5 0	110.4 –
63	0.0 – 3.1 3.1 – 10.0	siCl Sa	22.6 16.7	11.3 30.8	42.7 0	85.2 –
64	0.0 – 3.2 3.2 – 10.0	Si MSa	20.9 19.5	17.9 39.3	34.5 0	74.4 –
65	0.0 – 2.9 2.9 – 10.0	clSi FSa	22.3 17.5	12.7 32.8	58.3 0	120.6 –
66	0.0 – 2.2 2.2 – 10.0	saSi Sa	20.7 17.5	18.9 35.6	35.5 0	76.4 –
67	0.0 – 2.6 2.6 – 10.0	Cl MSa	21.3 18.8	20.5 36.3	28.3 0	98.3 –
68	0.0 – 2.1 2.1 – 10.0	siCl Gr	22.9 20.7	19.2 40.4	26.8 0	95.2 –
69	0.0 – 2.7 2.7 – 10.0	clSi saGr	21.4 18.3	22.6 33.7	34.2 0	81.4 –
70	0.0 – 2.0 2.0 – 10.0	siCl MSa	22.2 17.5	14.5 35.4	42.6 0	76.6 –