PercolationTests.ie
Planning Assessments & Land Surveys

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BRE Digest 365 Report.

Prepared on behalf of:

Ailish Russell

At:

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BRE Digest 365 Test

		Revision	1.00
Job No:	Soakpit 1	Page:	C/01
Section: 31 Templeville Road, Dublin 6W	Prepared By:	DR	Date: 29/06/2022

ALTERNATIVE SOAKAWAY SIZES

	trench soakaways		
width of trench *[mm]*	450	600	900
required trench length *[m]*	11.28	9.05	6.57
	ring soakaways		
diameter of ring *[mm]*	1500	2100	2400
required pit diameter *[m]*	2.35	2.35	2.35

** Based on effective depth and number of pits as in Soakaway Data table*

SUMMARY OF CALCULATIONS

critical design rainfall duration 't_{crit}' =	240	*min*
required storage volume 'V_{req}' =	2.33	m^3
provided storage volume 'V_{prov}' =	2.57	m^3
utilisation factor =	0.91	*.OK*
required time to discharge 50% 't_{50}' =	4.63	*hours*
utilisation factor =	0.19	*.OK*

GENERAL DATA

site location: [redacted] Ireland
soakaway type: **Infilled pit or trench**

impermeable area drained to soakaway 'A' *[m^2]* =	77
60 min rainfall depth of 5 year return period 'R' *[mm]* =	16
M5-60 to M5-2d rainfall ratio 'r' =	0.28
allowance for climate change:	20%

SOAKAWAY DATA

soakaway width 'W' [m] =	1.50
soakaway length 'L' [m] =	4.50
total depth from ground level 'D_b' *[m]* =	1.00
depth to drain invert level 'D_d' *[m]* =	0.60
soakaway effective depth 'D_{eff}' *[m]* =	0.40
free volume in infill aggregate *[%]* =	95

SOIL INFILTRATION DATA

allowance for infiltration through soakaway base:	30%
available on-site infiltration test results:	(●) Yes ( ) No
use soakage trial pit table below	
internal surface area of trial pit 'a_{p50}' [m^2] =	1.25
storage volume between 75-25% 'V_p' [m^3] =	0.13
time for water to fall from 75-25% 't_p' [min] =	95.83
soil infiltration rate 'f' [m/s] =	1.74E-05

SOAKAGE TRIAL PIT DATA

soakage trial pit width 'W_t' *[m]* =	0.50
soakage trial pit length 'L_t' *[m]* =	1.00
total depth from ground level 'D_{tb}' *[m]* =	1.20
depth to pipe invert level 'D_{tp}' *[m]* =	0.70
soakage trial pit effective depth 'D_{teff}' *[m]* =	0.50
free volume in infill aggregate *[%]* =	100

NOTE: faces of excavation assumed to be vertical

Infiltration Rate: Good - No Winter high watertable noted above 1.2m below ground

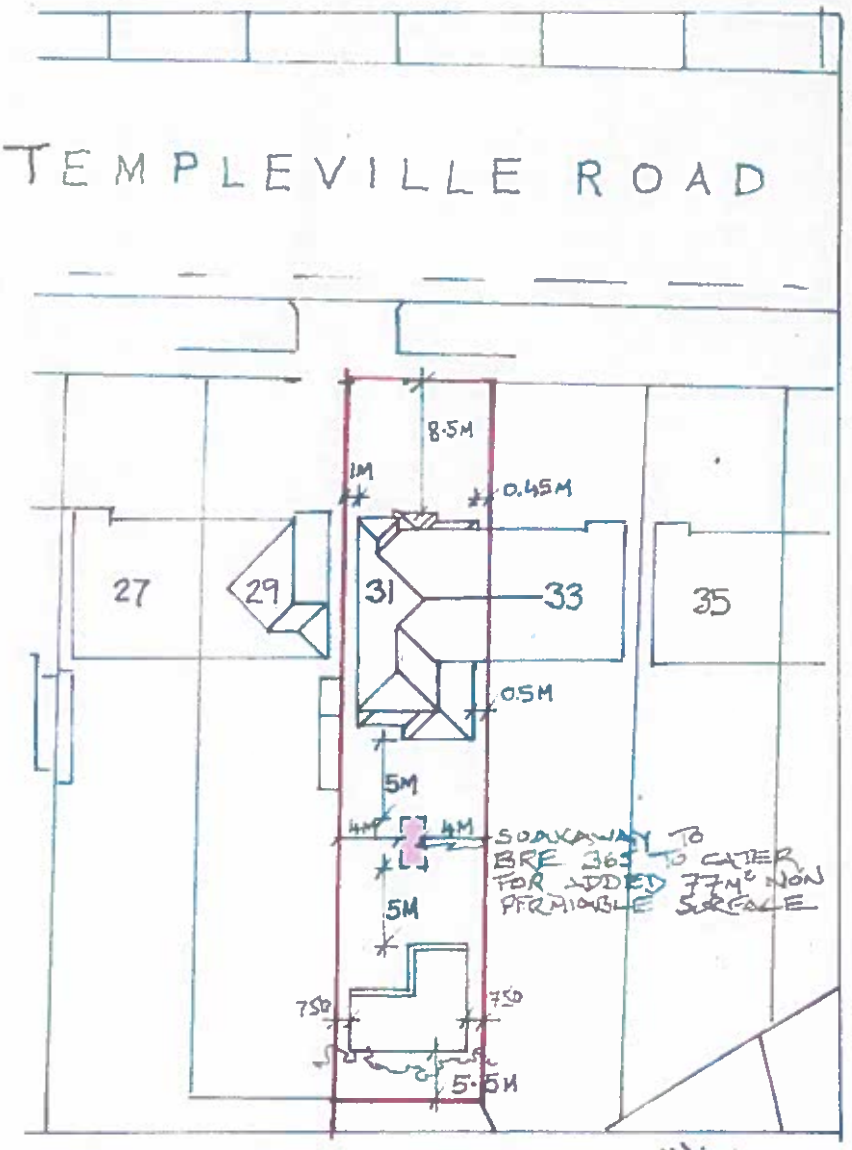
REQUIRED STORAGE CAPACITY PER RAINFALL DURATION

rainfall duration *[min]*	rainfall factor Z1	M5-D rainfalls *[mm]*	M30-D Z2	M30-D rainfalls *[mm]*	M30-D inflow *[m^3]*	Ignore Z2	Ignore rainfalls *[mm]*	Ignore inflow *[m^3]*	Ignore Z2	Ignore rainfalls *[mm]*	Ignore inflow *[m^3]*	outflow from soakaway *[m^3]*	required storage *[m^3]*
5	0.33	5.21	1.44	9.02	0.69							0.02	0.67
10	0.48	7.57	1.47	13.31	1.02							0.05	0.98
15	0.58	9.14	1.48	16.24	1.25							0.07	1.18
30	0.76	11.96	1.49	21.41	1.65							0.14	1.51
60	1.00	15.70	1.49	28.08	2.16							0.28	1.89
120	1.27	19.88	1.47	35.15	2.71							0.55	2.15
240	1.63	25.53	1.46	44.67	3.44							1.11	2.33
360	1.86	29.20	1.45	50.67	3.90							1.66	2.24
600	2.22	34.79	1.43	59.66	4.59							2.77	1.82
1440	3.05	47.85	1.38	79.36	6.11							6.65	0.00

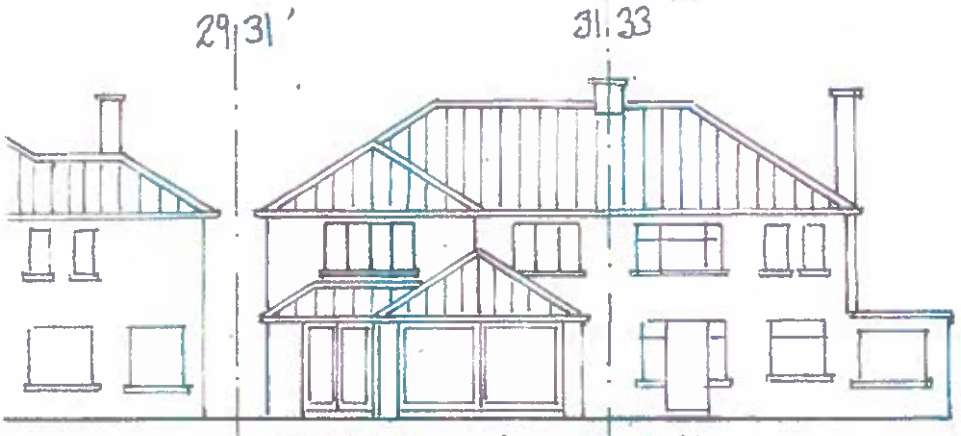
** Z2 is a growth factor from M5 rainfalls*

SOAKAGE TRIAL PIT INFILTRATION TEST RESULTS

water level measurement N°		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Soakage Trial 1	time *[min]* =	0	90																	
	depth to water *[m]* =	0.80	1.10																	
Soakage Trial 2	time *[min]* =	0	95																	
	depth to water *[m]* =	0.80	1.10																	
Soakage Trial 3	time *[min]* =	0	115																	
	depth to water *[m]* =	0.80	1.10																	

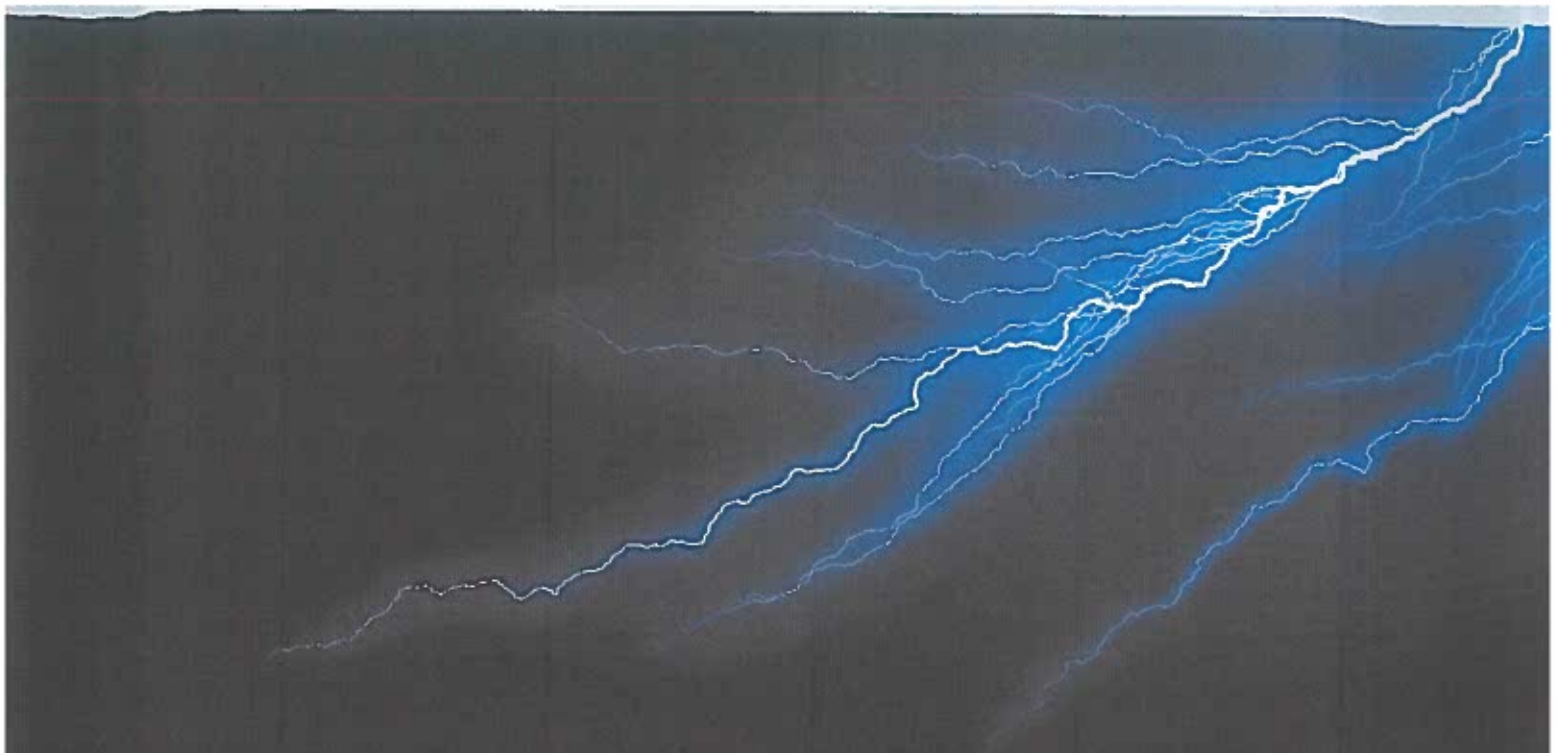


POSED SITE PLAN 1:500



ONTIGUOUS REAR ELEVATION 1:200

ALTERATIONS + ADDITIONS TO 31 TEMPLEVILLE ROAD.
+AILISH RUSSELL
OVAN MRIAI ARCHITECT
> ROAD DUBLIN 6



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WAV013 - January 2020

Met Eireann

Return Period Rainfall Depths for sliding Durations

Irish Grid: Easting: 319075, Northing: 232626,

	Interval		Years												
DURATION	6months,	1year,	2,	3,	4,	5,	10,	20,	30,	50,	75,	100,	150,	200,	250,	500,
5 mins	2.6,	3.7,	4.2,	5.1,	5.7,	6.2,	7.8,	9.6,	10.7,	12.4,	13.9,	15.1,	16.8,	18.2,	19.4,	N/A ,
10 mins	3.6,	5.1,	5.9,	7.2,	8.0,	8.7,	10.8,	13.3,	15.0,	17.3,	19.4,	21.0,	23.5,	25.4,	27.0,	N/A ,
15 mins	4.2,	6.0,	7.0,	8.4,	9.4,	10.2,	12.7,	15.7,	17.6,	20.3,	22.8,	24.7,	27.6,	29.9,	31.8,	N/A ,
30 mins	5.6,	7.8,	9.0,	10.8,	12.1,	13.0,	16.2,	19.7,	22.0,	25.3,	28.2,	30.5,	34.0,	36.7,	38.9,	N/A ,
1 hours	7.3,	10.2,	11.7,	14.0,	15.5,	16.7,	20.5,	24.8,	27.6,	31.5,	35.0,	37.7,	41.8,	45.0,	47.7,	N/A ,
2 hours	9.7,	13.3,	15.2,	18.0,	19.9,	21.3,	26.0,	31.2,	34.5,	39.3,	43.4,	46.6,	51.5,	55.3,	58.4,	N/A ,
3 hours	11.4,	15.5,	17.7,	20.8,	23.0,	24.6,	29.8,	35.6,	39.4,	44.6,	49.3,	52.8,	58.2,	62.3,	65.7,	N/A ,
4 hours	12.8,	17.3,	19.7,	23.2,	25.5,	27.2,	32.9,	39.2,	43.3,	48.9,	53.9,	57.6,	63.4,	67.9,	71.5,	N/A ,
6 hours	15.1,	20.2,	22.9,	26.8,	29.4,	31.4,	37.8,	44.8,	49.3,	55.6,	61.1,	65.3,	71.6,	76.5,	80.5,	N/A ,
9 hours	17.8,	23.7,	26.7,	31.1,	34.0,	36.3,	43.4,	51.2,	56.3,	63.2,	69.3,	73.9,	80.9,	86.2,	90.6,	N/A ,
12 hours	20.0,	26.4,	29.7,	34.6,	37.7,	40.2,	47.9,	56.4,	61.8,	69.3,	75.7,	80.7,	88.2,	93.9,	98.6,	N/A ,
18 hours	23.5,	30.8,	34.6,	40.1,	43.6,	46.4,	55.0,	64.5,	70.5,	78.7,	85.9,	91.3,	99.6,	105.9,	111.0,	N/A ,
24 hours	26.4,	34.4,	38.5,	44.5,	48.4,	51.4,	60.7,	70.9,	77.4,	86.2,	93.9,	99.8,	108.6,	115.3,	120.7,	139.4,
2 days	32.1,	41.1,	45.6,	52.1,	56.3,	59.5,	69.5,	80.2,	87.0,	96.2,	104.2,	110.1,	119.1,	125.9,	131.5,	150.2,
3 days	36.7,	46.4,	51.3,	58.3,	62.8,	66.2,	76.7,	88.0,	95.1,	104.7,	112.9,	119.1,	128.3,	135.3,	141.0,	160.2,
4 days	40.7,	51.1,	56.3,	63.7,	68.4,	72.0,	83.1,	94.8,	102.2,	112.1,	120.6,	127.0,	136.5,	143.7,	149.5,	169.1,
6 days	47.8,	59.3,	65.0,	73.0,	78.2,	82.1,	94.1,	106.7,	114.5,	125.1,	134.1,	140.8,	150.8,	158.4,	164.5,	184.9,
8 days	54.0,	66.5,	72.6,	81.2,	86.8,	90.9,	103.7,	117.0,	125.3,	136.4,	145.8,	152.9,	163.4,	171.2,	177.5,	198.7,
10 days	59.6,	73.0,	79.5,	88.7,	94.5,	98.9,	112.4,	126.4,	135.0,	146.7,	156.5,	163.8,	174.7,	182.8,	189.4,	211.2,
12 days	64.9,	79.1,	86.0,	95.6,	101.7,	106.3,	120.4,	135.0,	144.0,	156.1,	166.3,	173.9,	185.1,	193.5,	200.3,	222.8,
16 days	74.7,	90.2,	97.8,	108.3,	114.9,	119.9,	135.1,	150.8,	160.4,	173.3,	184.2,	192.2,	204.1,	213.0,	220.1,	243.8,
20 days	83.7,	100.5,	108.6,	119.9,	127.0,	132.3,	148.5,	165.1,	175.3,	188.9,	200.3,	208.8,	221.3,	230.6,	238.1,	262.9,
25 days	94.2,	112.4,	121.2,	133.3,	140.9,	146.6,	163.9,	181.6,	192.5,	206.9,	218.9,	227.9,	241.1,	250.8,	258.7,	284.6,

NOTES:

N/A Data not available

These values are derived from a Depth Duration Frequency (DDF) Model

For details refer to:

'Fitzgerald D. L. (2007), Estimates of Point Rainfall Frequencies, Technical Note No. 61, Met Eireann, Dublin',
Available for download at www.met.ie/climate/dataproducts/Estimation-of-Point-Rainfall-Frequencies_TN61.pdf

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BRE digest 365 test hole

31 Templeville Road - 29/06/2022

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Date: 22/03/2022
Reference: RYDA01001

INSURANCE CERTIFICATE

To Whom It May Concern

We confirm we act as Insurance Brokers to the above and set out below a summary of cover we have arranged:

Business Description: *Soil Engineer (Percolation Testing)*

PROFESSIONAL INDEMNITY

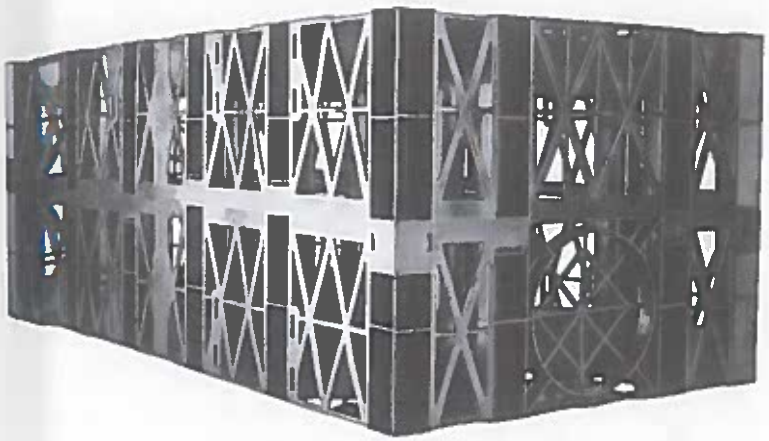
Policy No.	PID00024862
Insurer:	Accredited Insurance (Europe) Ltd
Period of Insurance:	04/03/2022 to 03/03/2023
Limit of Indemnity:	€1,000,000

Subject always to Insurers policy wording, warranties, conditions, restrictions & exclusions a copy of which is available on request.

We trust this is in order but if you have any queries, please do not hesitate to contact us.

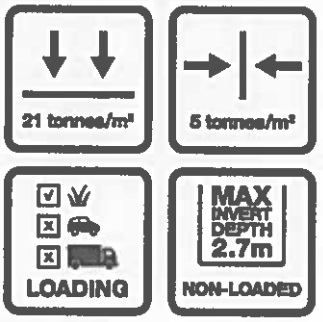
Yours sincerely,

Gary Kinsella
Commercial Broker
P: (01) 524 1415
E: Gary@sound.ie



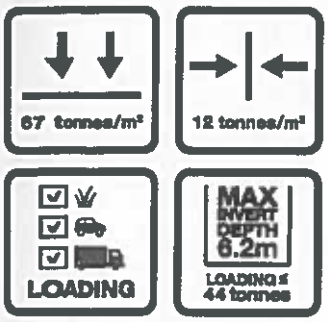
AquaCell
ECO

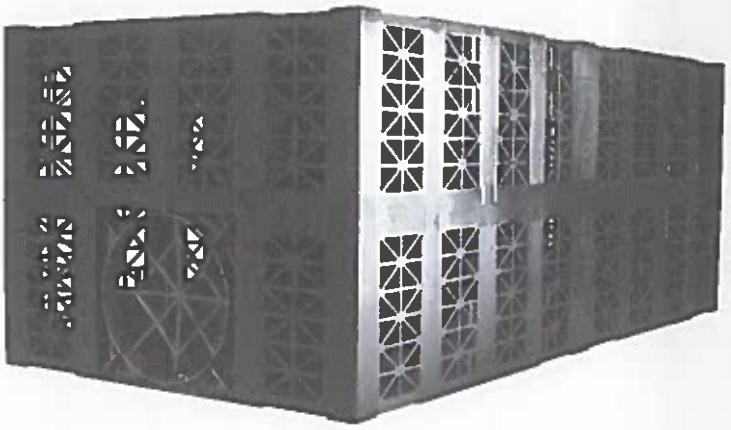
ECO is manufactured from specially reformulated, recycled material and has been designed for shallow, non-trafficked, landscaped applications.

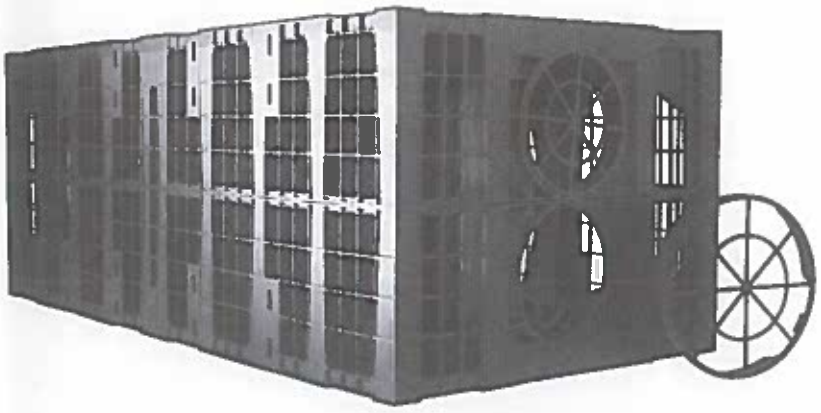


AquaCell
CORE-R

CORE-R has been designed for use in deep applications, subject to both regular and heavy traffic loadings, such as cars and HGV's.

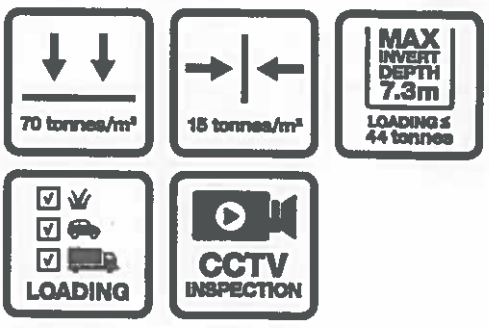






AquaCell
PLUS-R

PLUS-R has been designed primarily for use in applications where inspection is required, and is suitable for use in all applications from landscaped areas to heavily trafficked areas.



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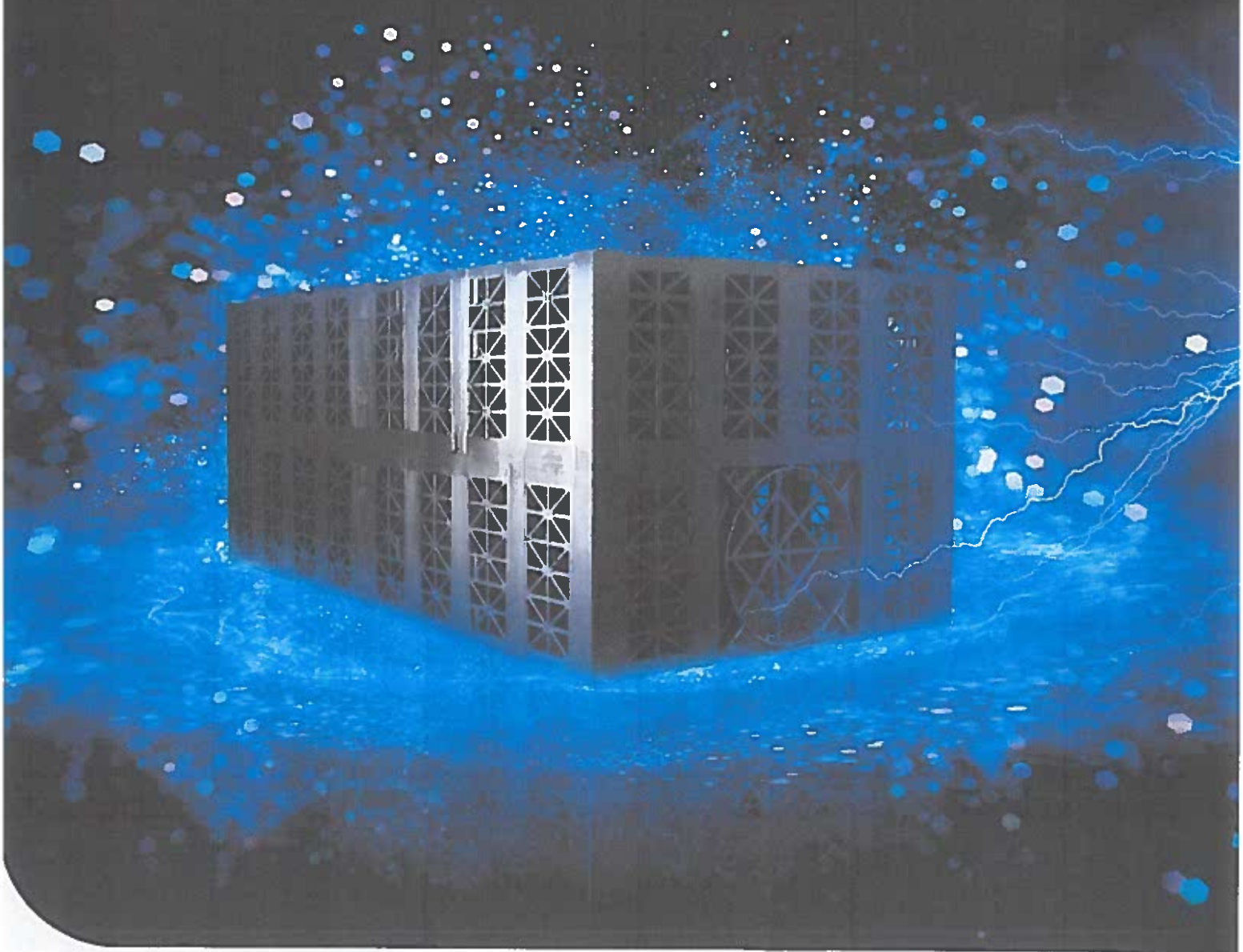

wavin