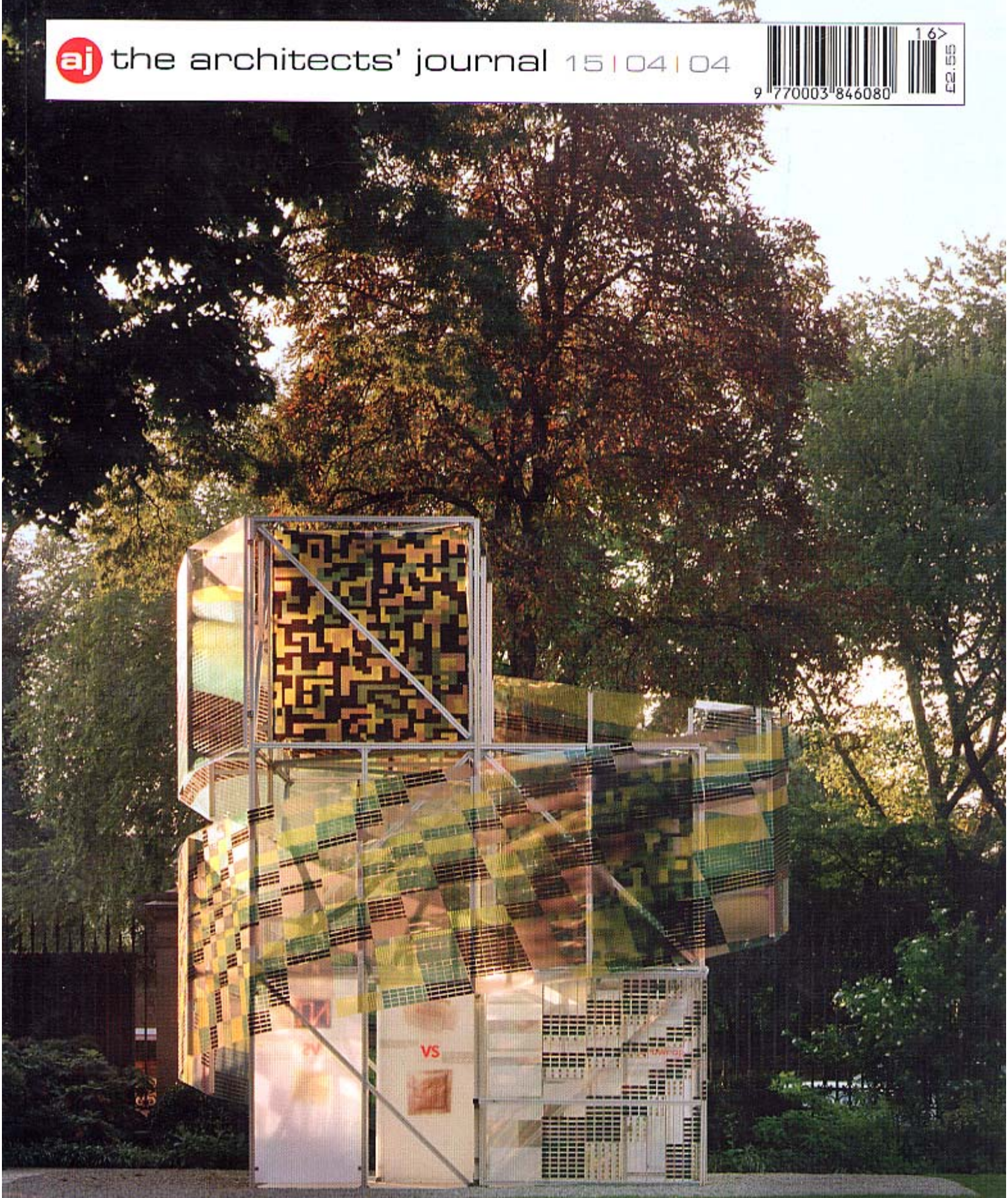
aj the architects' journal 15 | 04 | 04

9 770003 846080 16 £2.55



Designing by numbers

Interbuild preview Digital fabricators – the real High-Tech

aj contents 15 | 04 | 04

the architects' journal
151 Rosebery Avenue,
London EC1R 4GB

Editorial enquiries
020 7505 6700
Editorial fax number
020 7505 6701
Email
firstname.surname@emap.com

Editor
Isabel Allen (020 7505 6709)
News editor
Zoë Blackler (020 7505 6636)
Senior reporter
Ed Dorrell (020 7505 6715)
Buildings editor
Barrie Evans (020 7505 8609)
Technical and practice editor
Austin Williams (020 7505 6711)
Working details editor
Sue Dawson (015242 21692)
Review and information editor
Andrew Mead (020 7505 6717)
Editor, AJ Focus/special projects
Ruth Slavid (020 7505 6703)
Editorial assistant
Cristina Esposito (020 7505 6716)
Production editor
Paul Lindsell (020 7505 6707)
Sub-editor
Matt Hill (020 7505 6708)
Art editor
Minesh Parmar (020 7505 6704)
Assistant art editor
Sarah Douglas (020 7505 6705)
Editorial administration
Angela Newton (020 7505 6700)
Victoria Huttler (020 7505 6700)

Display advertising
020 7505 6823
Recruitment advertising
020 7505 6803/6737
Advertising fax number
020 7505 6750
Account managers
Mike McSweeney (020 7505 6706)
Samuel Lau (020 7505 6746)
Katie Deer (020 7505 6743)
Sales manager
Malcolm Perryman (020 7505 6698)
Senior account executive
Lucy Herdsman (020 7505 6873)
Account executives
Nick Roberts (020 7505 6662)
Chris Bond (020 7505 6816)
Key account manager
Midge Myatt (tel 01902 851645)
(fax 01902 851603)
Recruitment
Charlie Connor (020 7505 6737)
Laurie Shenoda (020 7505 6803)
Advertisement production
Sharon Parham (020 7505 6874)
Marketing manager
Zoe Phillips (020 7505 6615)
Sales director
Andrew Knight (020 7505 6811)
Group publisher
Jonathan Stock (020 7505 6744)
Group editorial director
Paul Finch (020 7505 6702)
Managing director
Graham Harman (020 7505 6878)

Subscriptions and delivery
Subscription rates: £88 UK, £57 UK students, £145 overseas.
To subscribe, please use the order form in this issue, email **ajo@subscription.co.uk** or call **01858 438 847**
Also call that number to notify us of a change of address or delivery problems

Back numbers
Tel **01344 404407**
Fax **01344 714440**
Email **brebookshop@ihsrapidoc.com**

ABC
15,205
(July 2002-June 2003)
ISSN 0003 8466

emap communications

This week's issue concentrates on architectural projects which exploit advances in digital fabrication, including Orpheus Filter *(pictured)*, developed by Canadian architect Philip Beesley and artist and scientist Diane Willow. This man-made structure gradually accumulates plant matter eventually decaying into a living wall. The featured projects form part of the 'Digital Fabricators' exhibition, which will be at the Architecture Pavilion at Interbuild on 25-29 April.

NEWS	4	
HELLMAN	14	
AJENDA	16	**Reach for the Skylon: should Powell and Moya's 1951 icon be rebuilt?**
EDITORIAL/LETTERS	19	
SIMON ALLFORD/PEOPLE	20	**Dancing queen: LIVESpace's Claire Russ**
MARTIN PAWLEY	22	
INTERBUILD PREVIEW	26	**The Architecture Pavilion**
	31	**Digital Fabricators**
TECHNICAL AND PRACTICE	78	**Legal matters; webwatch**
DIARY	80	**Exhibitions and events**
REVIEW	82	**Let there be light: Elwall's picture perfect**
	83	**Uninnovative *Innovation***
	84	**The cities of Oliver Zwink**
RECRUITMENT	86	
CLASSIFIED	93	
ASTRAGAL	98	
Cover		**The SmartWrap Pavilion, New York** **Photograph by Barry Halkin**

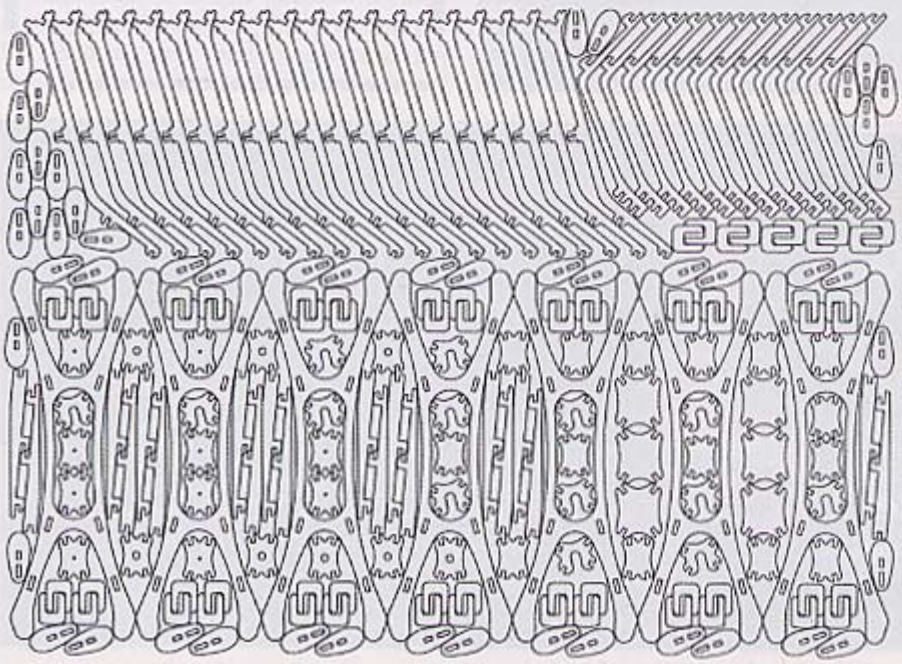
aj+ www.ajplus.co.uk
Visit our website for daily news, the AJ archive, buildings, competitions and product information. Magazine articles marked + are available in greater detail online.

Orpheus Filter, the latest in a series of reflexive membranes developed by Canadian architect Philip Beesley with artist and scientist Diane Willow, is an intricate structure that will give way to a living wall

Orpheus Filter

For the 'Digital Fabricators' exhibition, the Canadian architect Philip Beesley has produced a prototype building membrane. *Orpheus Filter* is conceived as an 'interactive geotextile' and is part of a series entitled 'Reflexive Membrane' being developed with artist and scientist Diane Willow. The fabric comprises a dense array of interlinking elements, making an intricate three-dimensional structure. It is equipped with layers of miniature valves and clamping mechanisms that slowly digest and convert surrounding material into a fertile living wall. The array is organised in a cohesive structure using shifting patterns of non-repeating geometry. The project draws on Beesley's knowledge of industrial design and architectural textiles (honed at the University of Waterloo's Integrated Centre for Visualization, Design and Manufacturing) and on the expertise of Willow, who specialises in integrating flexible miniature computer components (microprocessors, sensors, actuators) at the MIT Media Lab.

The work aims to confirm the notion that textiles can react in a concrete and percepti-



Above: miniature valves and clamping mechanisms slowly digest and convert surrounding material into a fertile living wall
Left: the fabric is organised using a shifting patterns of non-repeating geometry

A dense array of interlinking elements, including valves and clamps, makes an intricate three-dimensional structure

ble manner. The actions in this project are subtle and occur over long stretches of time. Trembling vibrations and visual oscillation provide a general undercurrent. Osmotic action, which pulls moisture and floating matter through the pores of outer membranes, is created within intermeshing valves detailed into the meshwork surface of the installation. Clamping, injection and digestion functions would occur in reaction to the intrusion of larger organisms within the structure. These processes would encourage a living turf to accumulate, covering the lightweight matrix. The piece would eventually decay and be replaced by this growth.

Central to this reflection is the desire to harmonise artificial and natural processes, and to expose similarities in the act of creation in man and nature. The project seeks to provoke intense emotional and psychological responses in visitors so that they question the boundaries between nature and artifice and examine their own organic condition as they interact with technology.

Orpheus Filter was produced by directly laser-cutting acrylic, latex and Mylar membranes from digital models. The tectonic assembly of the laser-cut parts forms an intrinsic part of the design of each component, reflecting the carefully considered craft of architecture by Philip Beesley.

In Beesley's practice, the 'Reflexive Membranes' project acts as a laboratory that directly informs architectural design. This can be seen in the design of his recent Niagara Credit Union, Ontario, where a high, light-filled hall uses a basketwork structure similar to the lattice systems originally conceived for the '...Membranes' project.

ARCHITECT
Philip Beesley, University of Waterloo
CONSULTANT
Diane Willow, MIT Media Lab
PROTOTYPING
University of Waterloo's Integrated Centre for Visualization, Design and Manufacturing
DESIGN ASSISTANTS
Will Elsworthy, Alex Josephson, Luanna Lam, Thomas-Bernard Kenniff, Alex Lukachko, Vincent Hui, Kirsten Douglas
INSTALLATION
Collaboration with London Metropolitan University Department of Architecture and Spatial Design