Not quite computing
- almost art

JOHN Lansdown

Making arrangements

The other day artist Duncan Smith
came to a Computer Arts Society
meeting with an interesting problem in
combinatorial computing which had
arisen in his attempts to arrange
fifteen rectangles on a canvas in
accordance with certain rules.
Although the problem he posed was
set in terms of painting, I think it best
described in architectural terms. Image
an eccentric millionaire with a passion
for mathematics (Dr Matrix?) who
wishes you to design him a single
storey house having 15 rooms with the
following specification.
1. Rooms can have only one door in
any wall and each room should have a
different layout of doors.
2. There should be four rooms with
one door each.
3. Six rooms should have two doors
each.
4. Four rooms should have three doors
each.
5. One room should have four doors.
The questions which arise then are:
can a house be designed to meet this
specification and, if so, how many
different designs are there?
Well, it is certainly possible
to design with this specification and
Figures 1 and 2 (opposite) show two
possibilities, one with an internal
courtyard of one unit square (there are
other designs having a courtyard
of two squares). Duncan Smith had
already discovered over sixty
variations but, doing this by hand, he
found it a tedious process particularly
as it was becoming more and more
difficult to discover new solutions. He
wondered therefore whether there was
a computer method of generating
further designs. No one at the meeting
was able to suggest an efficient
algorithm for doing this nor were we
able to find a way of deciding how
many solutions there would be,
although Alan Sutcliffe made a
preliminary analysis which suggests
that there may be many hundreds.
Some of us thought that existing
arrangement programs such as
CORRELAF, which work from an
association matrix and seem
appropriate, would soon be
overwhelmed by the problem.
Has any reader a good idea on how
to proceed? I warn anyone tackling
the problem that it is addictive and,
one you start on it, you'll find
yourself sketching layouts at all spare
moments. A good computer method
would save everyone a lot of time.

Stanley Gill

Everyone in the computing
community is saddened by the recent
loss of Stanley Gill and founder
members of the Computer Arts
Society particularly so. It was
Professor Gill at the IFIP Edinburgh
Congress in 1968 who suggested the
formation of a society to encourage
the use of computers in the arts and
gave us a lot of help to get it started.

Whilst he wasn't an active member
of the CAS, he was always interested
in and aware of its activities and gave
them considerable moral support. He
was instrumental in sorting out an
early financial problem we developed
and which could have scuttled us after
our first exhibition. His own interest
in computer art arose from some early
work he had done in computer music.

Appropriate forms

Because so many people have
attempted computer plotter-graphics
as an art form the quality of work
varies tremendously. Almost everyone
who has access to a plotter seems to
have tried to exploit its art potential,
generally by programming it to
produce families of Lissajous figures.
Whilst these are sometimes very
striking they seem to derive more from
thinking of the computer as an
analogue rather than a digital machine.
There are, however, some artists who
have greatly advanced the subject by
finding new methods appropriate to the
medium and, in doing so, have produced
drawings of incredible beauty and interest.

One such is Manfred Mohr, a
German artist who lives and works in
Paris. He has had many one-man and
group exhibitions all over the world
and has won prizes for his computer
graphics at the 10th Biennale,
Ljubljana and at San Francisco. Two
of his works shown here (Cover and
Figure 3) illustrate his interest
in repeating and overlapping simple
forms. Note that, in general, curves
(expensive in computer and plotter
time) are not drawn but suggested, and
how all the drawings create interest by
simple but appropriate means.

Manfred says of his work. 'The
dialogue with the computer implies
that results and their visual expression
have to be judged under completely
new aspects. It is evident that one
should not create single forms and
judge them by a traditional and
subjective aesthetic, but build up sets
of forms where the basic parameters
are relationships between forms with
no aesthetic value associated to any
particular form in the set.'

He draws our attention to a
quotation by Abraham Moles. 'The
machine doesn't think, it teaches us to
think.' Amen to that!