A sun lounge building (1) comprises a skeletal support framework having a foundation ring beam (2) mountable on a foundation, an upper ring beam (8), a plurality of stanchions (4) each fixable at one end onto the foundation ring beam (2), a plurality stanchion ceiling fixing means (5) to which the opposite ends of the stanchions (4) are fixable onto the upper ring beam (8). The stanchions (4) are fixable to one another by the foundation ring beam (2) and by stanchion ceiling fixing means (5) provided on the upper ring beam (8), wherein the foundation ring beam (2), the plurality of stanchions (4), the stanchion ceiling fixing means (5) and the upper ring beam (8) provide the entire weight bearing skeletal support framework for the sun lounge building. Prefabricated wall panels (11, 12) are provided for wholly or partially enclosing the spaces between the stanchions (4). A roof assembly is provided to overlie and be mounted on the upper ring beam (8).
The present invention relates to a sun lounge building and a method of assembling a sun lounge building.

The present method of constructing a sun lounge building involves digging a trench and laying concrete foundations and building foundation walls and footings in the ground. The floors are then poured and allowed to set and cavity walls are built up to the required height depending on the specific sun lounge building design. This generally entails building the brickwork up to about knee height after which a range of front and side window openings taking up a large surface area of the sun lounge building are created. Support for the window and door frames is generally provided by a plurality of stanchions bolted onto the footings and extending upwards between the inner and outer course of bricks defining the cavity wall. The stanchions carry lintels at their upper ends and a row of decorative brick is built on the lintels above the window openings. A roof is then constructed on the top of the sun lounge building using traditional trusses and roof covering elements such as slates. The normal insulation, ventilation and damp proof coursing is incorporated into the sun lounge building.

A problem with this technique of constructing the sun lounge building is that the owner of the property is entirely dependent on the different tradesmen turning up at the appropriate times to complete their various functions in order to have the sun lounge constructed in a reasonable period of time. The most important aspect of this work to home owners is the need to avoid unnecessary time delays to the construction work to try and keep to a minimum the inevitable disruption to the home owners' lifestyle that this work entails. It is an almost inevitable consequence of the complex nature of the construction industry that the scheduling of both the construction tasks and the tradesmen often breaks down resulting in long delays. This can result in foundation flooding or material degradation as a result of building construction components being exposed to inclement
weather conditions during long periods of delay in addition to the considerable discomfort and aggravation caused to the home owners/residents.

It is an object of the present invention to obviate or mitigate the problems associated with the traditional technique of constructing a sun lounge building outlined above.

Accordingly, the present invention provides a sun lounge building comprising a skeletal support framework having:

- a foundation ring beam mountable on a foundation;
- an upper ring beam; and
- a plurality of stanchions fixable onto the foundation ring beam with their opposite ends fixable onto the upper ring beam;

the stanchions being fixable relative to one another on the foundation ring beam and on the upper ring beam;

wherein the foundation ring beam, the plurality of stanchions, and the upper ring beam provide the entire weight bearing skeletal support framework for the sun lounge building.

Preferably, a plurality of spaced apart stanchion ceiling fixing means are provided to which the opposite ends of the stanchions are fixable onto the upper ring beam.

Advantageously, the entire skeletal support framework can be assembled on site in a very short period of time by ideally a single person and at most two people. The components are delivered as a kit of prefabricated parts to the building site where the foundation has been prepared such as piles driven into the ground for mounting the foundation ring beam on. The easily assembled skeletal support framework removes the need for the so called "wet trade aspect" of the construction of a sun lounge building.

Ideally, each stanchion has at least one stability support mounted on at least one of their ends.

Preferably, each stanchion has a pair of stability supports mounted on both of their ends.
In a second embodiment, a plurality of spaced apart stanchion foundation fixing means are provided fixable to the foundation ring beam.

In the second embodiment, the plurality of stanchions are length-adjustable relative to the stanchion foundation fixing means.

Ideally, the stanchion receiving foundation fixing means have at least one stability support mounted thereon.

Preferably, the stanchion receiving ceiling fixing means have at least one stability support mounted thereon.

Ideally, the skeletal framework comprising optionally the stanchion foundation fixing means, the foundation ring beam, the plurality of stanchions, the stanchion ceiling fixing means and the upper ring beam are all manufactured from metal.

Preferably, the skeletal framework comprising optionally the stanchion foundation fixing means, the foundation ring beam, the plurality of stanchions, the stanchion ceiling fixing means and the upper ring beam are all manufactured from steel.

Preferably, prefabricated wall panels are provided for wholly or partially enclosing the space between the stanchions.

Ideally, prefabricated lower wall panels are provided for wholly or partially enclosing the space between adjacent stanchions.

Preferably, the prefabricated lower wall panels have a substantially open rectangular support frame carrying a board on one main planar surface thereof.

Ideally, the prefabricated lower wall panels have a suitable exterior façade on the board.

Preferably, cooperating retaining means are provided between the stanchions and the wall panels.

In the first embodiment, the cooperating retaining means are provided by cooperating stanchion brackets mounted on the stanchions and lower wall panel brackets mounted on
the lower wall panels and cooperating brackets mounted on the stanchion ceiling fixing means and
the upper wall panels.

In the second embodiment, cooperating retaining means are provided between the stanchion foundation and ceiling fixing means and the prefabricated wall panels.

In the second embodiment, the cooperating retaining means are brackets mounted on the stanchion foundation and ceiling fixing means and the prefabricated wall panels.

Ideally, prefabricated upper wall panels are provided for wholly or partially enclosing the space between adjacent stanchion ceiling fixing means.

Preferably, the prefabricated upper wall panels have a substantially open rectangular support frame carrying a board on one main planar surface thereof.

Ideally, the prefabricated upper wall panels have a suitable exterior façade on the board.

Ideally, cooperating retaining means are provided between the stanchion ceiling fixing means and the prefabricated upper wall panels.

Advantageously, the person assembling the skeletal support framework comprising optionally the stanchion foundation fixing means, the foundation ring beam, the plurality of stanchions, the stanchion ceiling fixing means and the upper ring beam can readily hang and fasten the prefabricated wall panels onto the framework internally and externally of the skeletal framework.

Ideally, the floor comprises a plurality of prefabricated floor panels.

Preferably, the prefabricated floor panels are insertable into the skeletal support framework.

Ideally, the foundation ring beam has a floor engaging lip protruding into the sun lounge building.

Preferably, peripheral edges of the prefabricated floor panels are supported off the ground by the floor engaging lip of the foundation ring beam thereby defining a void.

Ideally, the prefabricated floor panels have an open framework structure carrying a panel on both main planar surfaces of the open framework.

Preferably, the prefabricated floor panels are insulated.
Ideally, a roof is provided comprising waterproof prefabricated structural assembly.

Preferably, the prefabricated roof assembly is mountable on the upper ring beam.

Electrical wiring may be preinstalled in the roof assembly to be connected after the roof structure is erected and secured.

Ideally, all electrical services will be pre-fitted to the roof assembly for sun lounge building.

On final construction of the sun lounge building, the pre-installed electrical services are connected to a main electrical loom. Ideally, the pre-installed electrical services are connected to the main electrical loom using quick snap connectors.

The insulation is cellular or foamed polystyrene or polyurethane or fibreglass.

Ideally, the insulation has fire retardant characteristics.

Accordingly, the present invention also provides a method of assembling a sun lounge building comprising the steps of:

- fixing a ring beam to a foundation;
- fixing a plurality of stanchions upright on the ring beam;
- fixing an upper ring beam to each stanchion to form a skeletal support framework for supporting the load of the sun lounge building.

Preferably, the method includes fixing a stanchion ceiling fixing means onto each stanchion and fixing the stanchion ceiling fixing means thereon;

Ideally, the method comprises fixing a stanchion foundation fixing means onto the foundation ring beam.

Preferably, the method further comprises securing a stanchion into each stanchion foundation fixing means and fixing the stanchion thereto.

Ideally, the method comprises fixing the skeletal support framework to a wall, for example, an adjacent building. Ideally, the skeletal support framework is fixed to the adjacent building using mechanical fasteners such as rawl plugs. The interface between the skeletal support framework and the adjacent building is flashed / waterproofed accordingly.
Preferably, the method comprises hanging prefabricated wall panels on the skeletal support framework.

Ideally, the method comprises inserting prefabricated floor panels onto a ground engaging lip protruding from the foundation ring beam.

Preferably, the method comprises lowering a prefabricated roof assembly onto the upper ring beam and fixing the roof assembly in place.

Ideally, the method comprises mounting windows and/or doors into the openings defined between the stanchions and the wall panels and fixing the windows/doors therein.

Accordingly, the present invention also provides a sun lounge building comprising a skeletal support framework and a plurality of prefabricated wall panels and co-operating retaining means between the panels and the skeletal support framework allowing the wall panels to be readily mountable on the skeletal support framework.

Ideally, the co-operating retaining means allow the prefabricated wall panels to be hung onto the skeletal support framework.

The invention will now be described with reference to the accompanying drawings which show by way of example only one embodiment of a sun lounge building in accordance with the invention. In the drawings:

Figure 1 is a perspective view of a sun lounge building skeletal support framework;

Figure 2 is a second perspective view of the sun lounge building skeletal support framework and roof;

Figure 3 is a third perspective view of the sun lounge building skeletal support framework and roof;

Figure 4 is a fourth perspective view of sun lounge building skeletal support framework and roof;

Figure 5 is a detail view of the foundation ring beam and floor;

Figure 6 is a detail view of the roof;
Figure 7 is a detail view of a hipped roof module;
Figure 8 is a detail view of a central hub;
Figure 9 is a detail view of a cooperating retaining member; and
Figure 10 is a detail view of a stanchion and foundation ring beam coupling arrangement.

Referring to the drawings generally there is shown a sun lounge building indicated generally by the reference numeral 1. The sun lounge building 1 has a skeletal support framework comprising a foundation ring beam 2, eight spaced apart stanchion foundation fixing means, in this instance tubes 3, and eight stanchions 4 releasably secured in the stanchion foundation tubes 3. Eight spaced apart stanchion ceiling fixing means, in this instance, tubes 5 are mounted on the opposite ends of the stanchions 4 to the ends housed in the stanchion foundation tubes 3. The stanchion foundation tubes 3 are fixed relative to one another by the foundation ring beam 2, preferably by welding or bolting, and the stanchion ceiling tubes 5 are fixed relative to one another by an upper ring beam 8, again preferably by welding or bolting. The stanchion foundation tubes 3, the foundation ring beam 2, the eight stanchions 4, the stanchion ceiling tubes 5 and the upper ring beam 8 provide the entire weight bearing skeletal support framework for the sun lounge building 1. Stability supports in the form of gusset plates 9 are provided on the stanchion receiving ceiling tubes 5 and on the stanchion receiving foundation tubes 3 for additional strength and stability.

Advantageously, the entire skeletal support framework can be assembled in a very short period of time by ideally a single person and at most two people. The components are delivered as a kit of prefabricated parts to the building site where piles have been driven into the ground within the previous few days. It is envisaged that the entire sun lounge building 1 will be erected within one day.

The skeletal framework comprising the stanchion foundation tubes 3, the foundation ring beam 2, the eight stanchions 4, the stanchion ceiling tubes 5 and the upper ring beam 8 are all manufactured from metal, preferably steel.
Prefabricated wall panels 11, 12 (see especially Figure 3) are provided for partially enclosing the space between the stanchion receiving tubes 3 and 5. Prefabricated lower wall panels 11 are provided for wholly or partially enclosing the space between adjacent stanchion receiving foundation tubes 3 and the prefabricated lower wall panels 11 have an open rectangular support frame 14 carrying a board on their main planar surfaces. The prefabricated lower wall panels 11 have a water proofed brick façade 16 on the board. Cooperating retaining members 21, see Figure 9, are provided on the stanchions 4 and on the prefabricated wall panels 11, 12. The cooperating retaining members 21 are provided by stanchion brackets 81 mounted on the stanchions 4 having slots 82 and wall panel brackets 85 formed for removable interlocking engagement with the stanchion brackets 81 to securely fasten the wall panels 11 onto the stanchions 4.

Prefabricated upper wall panels 12 are provided for wholly or partially enclosing the space between adjacent stanchion ceiling tubes 5. The prefabricated upper wall panels 12 have a substantially open rectangular support frame carrying a board on their main planar surfaces. The prefabricated upper wall panels 12 have a water proofed brick facade 36 on the board. Cooperating retaining members 31 are provided between the stanchion ceiling tubes 5 and the prefabricated upper wall panels 12. The cooperating retaining members 31 are also provided by stanchion brackets 81 mounted on the stanchions ceiling tubes 5 having slots 82 and wall panel brackets 85 formed for removable interlocking engagement with the slots 82 of the stanchion brackets 81 to securely fasten the wall panels 12 onto the stanchion ceiling tubes 5.

Advantageously, the person assembling the skeletal support framework comprising the stanchion foundation tubes 3, the foundation ring beam 2, the eight stanchions 4, the stanchion receiving ceiling tubes 5 and the upper ring beam 8 can readily hang and fasten the prefabricated wall panels 11, 12 onto the framework internally and externally of the skeletal framework.

The floor comprises a plurality of prefabricated floor panels 41 and the prefabricated floor panels 41 are inserted into the skeletal support framework when the foundation ring beam 2 has
been bolted to the foundation which may be a plurality of piles. The foundation ring beam 2 has a
floor engaging lip 43 protruding into the sun lounge building 1, see especially Figure 5. Peripheral
edges 44 of the prefabricated floor panels 41 are supported off the ground by the floor engaging lip
43 of the foundation ring beam 2. The prefabricated floor panels 41 have an open framework
structure carrying a panel 46 on both main planar surfaces of the open framework. The
prefabricated floor panels have an insulation material 47 within the confines of the panels 46 and
the framework.

A roof assembly of any prefabricated structure can be used. The roof shown in the drawings
is indicated generally by the reference numeral 51 see especially Figure 4 comprises a plurality of
prefabricated roof components mounted on the upper ring beam 8. The prefabricated roof
components comprise a first prefabricated roof module 52 mountable between two parallel wall
portions of the sun lounge building 1. The first prefabricated module is formed from a number of
spaced apart a-shaped roof trusses 53 having two rafters 54 and a cross-member 55.

The second prefabricated roof modules 57, see especially Figure 7 and Figure 8,
comprising the saddle/hipped portion of the roof have a pitch equal to the first prefabricated roof
modules in use. The saddle roof modules 57 have at least two rafters 58 with one pair of ends of
the rafters 58 being located adjacent each other and mounted on a substantially vertical beam 60
and the rafters 58 being splayed downwardly from the substantially vertical beam 60 defining a
triangular body section 59. The rafters 58 each have a ceiling tie 61 connected to and extending
from a point intermediate their ends to a location on the substantially vertical beam 60 below the
point of connection of the rafters 58. A plurality of substantially vertical beams 60 having a
trapezoidal cross-section come together to form a central hub at the intersection point of the hipped
end of the roof. The hip end rafters 58 splay down to the wall plate and beyond to form a soffit. A
central hub retaining bracket 181 is provided for retaining the vertical beams 60 of the second
prefabricated roof modules 57 together. The central hub retaining bracket 181 and the vertical
beams 60 have interlocking members namely the central hub retaining bracket 181 having locating
apertures 183 and the vertical beams 60 having protruding elements 185 insertable into the
locating apertures 183 of the retaining bracket 181 and being lockable thereon. It will of course be
appreciated that any cross-sectional shape of beam 60 is encompassed within the scope of the
present invention.

It will of course be appreciated that the hipped/saddle portion of the roof is not limited to sun
lounge buildings and this type of roof may be applied to cover any structure requiring this type of
roof.

The roof 51 is formed of a row of first prefabricated modules 52 with abutting edges of each
two adjacent first prefabricated modules 52 adapted to form waterproof joints and a number of
saddle roof modules 57 with abutting edges of each two adjacent saddle roof modules 57 forming
waterproof joints and the abutting edges of each two adjacent first prefabricated roof modules 52
and saddle roof modules 57 forming waterproof joints.

The first prefabricated roof modules 52 and the saddle roof modules 57 have a vapour
barrier and insulation material formed within their structure and roofing felt mounted on their
external surface. The felt is held in position by a plurality of horizontally oriented battens 71 covered
by roofing tiles or slates 72. Each roof module 52, 57 has one or more roof windows incorporated
into its structure or has one or more openings provided, each to facilitate the mounting of a dormer
window.

The insulation is cellular or foamed polystyrene or polyurethane or fibreglass. The insulation
also has fire retardant characteristics.

The number of stanchions used is determined by the length of the building required. The
drawings show eight stanchions but this number can be altered by decreasing to six or increasing
to ten or twelve stanchions as required.

Figure 10 shows an arrangement of alternative foundation and/or ceiling fixing means
indicated generally by the reference numeral 121 for coupling the stanchions 4 directly to the
foundation ring beam 2. The stanchions 4 are fixed to an angle bracket 122 which is secured to the
foundation ring beam 2 by bolts 123. In a modification, this can be by welding. In this case, the stability supports are replaced by two struts or ties 124 extending between the angle bracket 122 and the stanchion 4. Additionally, web plates similar to gussets plates 9 can be mounted onto the angle bracket 122, the stanchion 4 and the struts or ties 124.

The foundation and ceiling fixing means may be spigots rather than tubes with the stanchions tubular, at least at their ends engaging the spigots. There may be a length-adjustable facility provided to vary the height of the stanchions relative to the foundations and ceiling ring beams. This may be provided in the fixing means / stanchion joints.

In a simple embodiment, the stanchions may be welded to the foundation ring beam and to the upper ring beam without any other fixing means.

Rigidity of the building can be provided by the foundation and ceiling fixing means or by the wall panels when secured to the stanchions.

Variations and modifications can be made without departing from the scope of the invention outlined above and as claimed hereinafter.
CLAIMS

1. A sun lounge building comprising a skeletal support framework having a foundation ring beam mountable on a foundation, an upper ring beam, and a plurality of stanchions each fixable at one end onto the foundation ring beam, the stanchions being fixable relative to one another on the foundation ring beam and on the upper ring beam, wherein the foundation ring beam, the plurality of stanchions, and the upper ring beam provide the entire weight bearing skeletal support framework for the sun lounge building.

2. A sun lounge building as claimed in Claim 1, wherein a plurality of spaced apart stanchion ceiling fixing means are provided to which the opposite ends of the stanchions are fixable onto the upper ring beam.

3. A sun lounge building as claimed in Claim 1 or 2 wherein each stanchion has at least one stability supports mounted on at least one of their ends.

4. A sun lounge building as claimed in Claim 1 or 2, wherein each stanchion has a pair of stability supports mounted on both of their ends.

5. A sun lounge building as claimed in any one of the preceding claims, wherein a plurality of spaced apart stanchion foundation fixing means are provided fixable to the foundation ring beam.

6. A sun lounge building as claimed in Claim 5, wherein the stanchion foundation fixing means have at least one stability support mounted thereon.
7. A sun lounge building as claimed in any one of the preceding claims, wherein prefabricated wall panels are provided for wholly or partially enclosing the space between the stanchions.

8. A sun lounge building as claimed in any one of the preceding claims, wherein prefabricated lower wall panels are provided for wholly or partially enclosing the space between adjacent stanchions.

9. A sun lounge building as claimed in Claim 8, wherein the prefabricated lower wall panels have a substantially open rectangular support frame carrying a board on one main planar surface thereof.

10. A sun lounge building as claimed in Claim 8 or 9, wherein the prefabricated lower wall panels have a suitable exterior façade on the board.

11. A sun lounge building as claimed in any one of Claims 7 to 10, wherein cooperating retaining means are provided between the stanchions and the wall panels.

12. A sun lounge building as claimed in Claim 11, wherein the cooperating retaining means are provided by cooperating stanchion brackets mounted on the stanchions and lower wall panel brackets mounted on the lower wall panels and cooperating brackets mounted on the stanchion ceiling fixing means and upper wall panels.

13. A sun lounge building as claimed in Claim 12, wherein cooperating retaining means are provided between the stanchion fixing means and the prefabricated wall panels.
14. A sun lounge building as claimed in any one of the preceding claims, wherein prefabricated upper wall panels are provided for partially enclosing the space between adjacent stanchion fixing means.

15. A sun lounge building as claimed in Claim 14, wherein the prefabricated upper wall panels have a substantially open rectangular support frame carrying a board on one main planar surface thereof.

16. A sun lounge building as claimed in Claim 14 or 15, wherein the prefabricated upper wall panels have a suitable exterior façade on the board.

17. A sun lounge building as claimed in any one of Claims 12 to 16, wherein cooperating retaining means are provided between the stanchion ceiling fixing means and the prefabricated upper wall panels.

18. A sun lounge building as claimed in any one of the preceding claims, wherein the floor comprises a plurality of prefabricated floor panels.

19. A sun lounge building as claimed in Claim 18, wherein the prefabricated floor panels are inserted into the skeletal support framework.

20. A sun lounge building as claimed in Claim 18 or 19, wherein the foundation ring peripheral edges of the prefabricated floor panels are supported off the ground by a floor engaging lip of the foundation ring beam.
21. A sun lounge building as claimed in Claim 18, 19 or 20, wherein the prefabricated floor panels have an open framework structure carrying a panel on both main planar surfaces of the open framework.

22. A sun lounge building as claimed in Claim 17, 18, 19 or 20, wherein the prefabricated floor panels are insulated.

23. A sun lounge building as claimed in any one of the preceding claims, wherein a roof is provided comprising a waterproof prefabricated roof assembly.

24. A sun lounge building as claimed in Claim 23, wherein the prefabricated roof assembly is mountable on the upper ring beam.

25. A sun lounge building as claimed in Claim 24, wherein electrical wiring is pre-installed in the roof assembly to be connected after the roof structure is erected.

26. A sun lounge building as claimed in Claim 24, wherein all electrical services are pre-fitted to panels and roof assembly, the pre-installed electrical services being connected to a main electrical loom.

27. A sun lounge building as claimed in Claim 26, wherein the pre-installed electrical services are connected to the main electrical loom using quick snap connectors.

28. A method of assembling a sun lounge building comprising the steps of:
   fixing a ring beam to a foundation;
   fixing a plurality of stanchions upright on the ring beam;
fixing an upper ring beam to each stanchion to form a skeletal support framework for
supporting the load of the sun lounge building

29. A method as claimed in Claim 28, wherein the method further comprises fixing a stanchion
ceiling fixing means onto each stanchion and fixing the stanchion ceiling fixing means
thereon and to the upper ring beam

30. A method as claimed in Claim 28 or 29, wherein the method further comprises fixing a
stanchion foundation fixing means onto the foundation ring beam.

31. A method as claimed in Claim 30, wherein the method further comprises securing a
stanchion with each stanchion foundation fixing means and fixing the stanchion thereto.

32. A method as claimed in Claims 28, 29, 30 or 31, wherein the method further comprises
fixing the skeletal support framework to a wall.

33. A method as claimed in anyone of Claims 28 to 32, wherein the method further comprises
hanging prefabricated wall panels on the skeletal support framework.

34. A method as claimed in any one of Claims 28 to 33, wherein the method further comprises
inserting prefabricated floor panels onto a ground engaging lip protruding from the
foundation ring beam.

35. A method as claimed in any one of Claims 28 to 34, wherein the method further comprises
lowering a prefabricated roof assembly onto the upper ring beam and fixing the roof
assembly in place.
36. A method as claimed in Claim 35, wherein the method further comprises mounting windows and/or doors into the openings defined between the stanchions and the wall panels and fixing the windows/doors therein.

37. A sun lounge building comprising a skeletal support framework and a plurality of prefabricated wall panels and co-operating retaining means between the panels and the skeletal support framework allowing the wall panels to be readily mountable on the skeletal support framework.

38. A sun lounge building as claimed in Claim 37, wherein the co-operating retaining means allow the prefabricated wall panels to be hung onto the skeletal support framework.

39. A sun lounge building substantially as hereinbefore described with reference to the accompanying drawings.

40. A method of assembling a sun lounge building substantially as hereinbefore described with reference to the accompanying drawings.
Figure 4
Figure 5
A. CLASSIFICATION OF SUBJECT MATTER

INV. E04B1/00
ADD. E04B7/06

According to International Patent Classification (IPC) or both national classification and IPC.

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

E04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Further documents are listed in the continuation of Box C.

See patent family annex.

Date of the actual completion of the international search

30 July 2007

Name and mailing address of the ISA:

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NL - 2280 HV Rijswijk
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Fax: (+31-70) 340-3016

Date of mailing of the international search report

06/08/2007

Authorized officer

Rosborough, John
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