"The customer determines what the future will look like"

Futuristic; that could well be the description of the Exo concept sailing yacht. It is about huge glass windows all around, allowing greater amounts of light into the yacht’s interior. The new 46-metre concept Exo is the result of the partnership between Claydon Reeves and Dykstra Naval Architects. It reflects Dykstra’s vision of what the sailing yacht of the future may look like. Dykstra Naval Architects MD and Naval Architect Thys Nikkels adds: “We combine the customer’s sailing experience with our expertise.”

People who mention the company name of Dykstra, mean ‘sailing’ or, in the words of Thys Nikkels: “We are busy with anything that sails; something between 4 metres and of 140 metres length.” Dykstra is the architect of vessels such as the Rainbow Warrior and the Maltese Falcon. Nikkels stresses the fact that Exo is a kind of study platform, aimed to put new ideas to the test and to experiment with innovative parts. “It is quite simple: the customer determines precisely what the future will look like. We will have to continuously adapt things we devise today, to gear them up for the future. Dykstra is positioned in the niche of classically rigged yachts with an ageless beauty. As a rule, they look like yachts of the last century, equipped with much wood. However, we experiment continuously with modern insights on techniques and design. The Exo concept should be respected in that way. We add things of importance to us onto this concept, and add what we hear about our clients’ sailing experiences.”
A different way of water sensation
Nikkels gives a practical example
about the subject: "Many clients tell
us that they hardly use the lower
salon, as they have the feeling to
be locked in as in a cellar. We have
worked towards their input, that is
reflected in Exo. The lower salon and
the room on top are combined to a
large open space in the ship, with
much glass in the hull. It does not
only provide a nice view, but also a
different sensation of the water that
flows along the glass."

GLASS PANELS
The glass is the most striking aspect
of the Exo concept. The research on
the glass construction is thoroughly
done. Nikkels explains: "Together with
the Elise Leichtbau department of the
Alfred Wegener institute, we monitor
each and every force a yacht under­
goes. Based on the forces that act
between them, an optimal construc­
tion has been devised, in which the
heaviest forces are dissipated by the
skeleton of the hull. In between the
parts, large, flexible glass panels can
be fitted, that do not need to respond
to longitudinal strength."

TECHNIQUES AND ENERGY
It is not only the organic design that
makes Exo out of the ordinary.
Nikkels says: "Naturally, we also
look into technical innovations for
the 46 metres long yacht concept.
One can think of retractable propul­
sion installations, such as propellers,
the lift keel and sail rigging systems.
We designed the Dyna-Rig automated
sail system for the Maltese Falcon.
It needs just one push of a button to
unfold its sails within six minutes."

It is just one example of innova­
tions that Dykstra explores, "Many
interesting things are happening in
the field of the designing processes.
There are advanced calculation tools
that can calculate and monitor fuel
use and much more. There are also
developments concerning generating
and storage of energy. An example
is that we apply solar cells on deck
of smaller vessels. As it is, we also
experiment with integrating solar
cells in a sail. Besides this, there
are ongoing fast developments in
optimising batteries, hydrogen cells,
and wind and water generators. To my
mind, the most energy saving can be
found in the capability to sail with­
out a propulsion engine. That is why
we particularly focus on that. Small
energy reductions can be realised
by cooling of rooms in an alternative
way, through which you do not need
to use the air condition system, being
one of the main energy consuming
devices on a yacht."

INNOVATION STATEMENT
The sailing yacht of the future: integrated
energy generating and smart systems
An automated sailing system, an open deck, and
many glass windows, thus creating light rooms: in
this way, the sailing yachts of the future provides
the best sailing experience when Dykstra Naval
Architects and designer Claydon Reeves have it
their way. They invented the Exo concept, includ­
ing these characteristics. They develop systems
for energy generating and energy storage, that
will make a combustion engine redundant. It can
be done through energy generating from the
propeller or integrated solar cell on deck, glass or
the rigging system. The sailing yacht of the future
also has systems that provide feedback about
performances and powers in the rigging system
and the construction.

Thys Nikkels
Thys@dykstra-na.nl

The sailing yacht of the future: integrated
energy generating and smart systems
An automated sailing system, an open deck, and
many glass windows, thus creating light rooms: in
this way, the sailing yachts of the future provides
the best sailing experience when Dykstra Naval
Architects and designer Claydon Reeves have it
their way. They invented the Exo concept, includ­
ing these characteristics. They develop systems
for energy generating and energy storage, that
will make a combustion engine redundant. It can
be done through energy generating from the
propeller or integrated solar cell on deck, glass or
the rigging system. The sailing yacht of the future
also has systems that provide feedback about
performances and powers in the rigging system
and the construction.

Thys Nikkels
Thys@dykstra-na.nl