

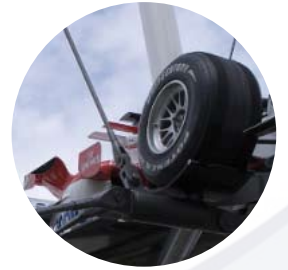
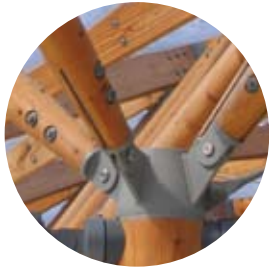


The Winners

Tekla UK

MODEL
competition
2007

The model competition is one way to celebrate the versatility of Tekla Structures and also demonstrates how the software solution affects the work landscape around the world. Tekla Structures plays a great role in creating many of the complex structures seen and admired every day. Show casing these models expresses appreciation toward customers and enables Tekla to share such great success stories.



We have separated the model competition into four different sections to ensure that all areas of the Building and Construction industry associated with Tekla Structures are covered. One prize is issued to each section making four prizes in total. One model can be entered per company for each of the segments if desired.

The Competition Sections:

- > Builds at 150 tonnes and over
- > Builds under 150 tonnes
- > Multi-Material (precast, timber, etc.)
- > Student Models

All Tekla's customers in the UK, Ireland and Israel are entitled to participate in the Tekla UK model competition. The 2008 competition is now open, the winners are decided by a public vote.

> SH Structures *150 tonnes & over*

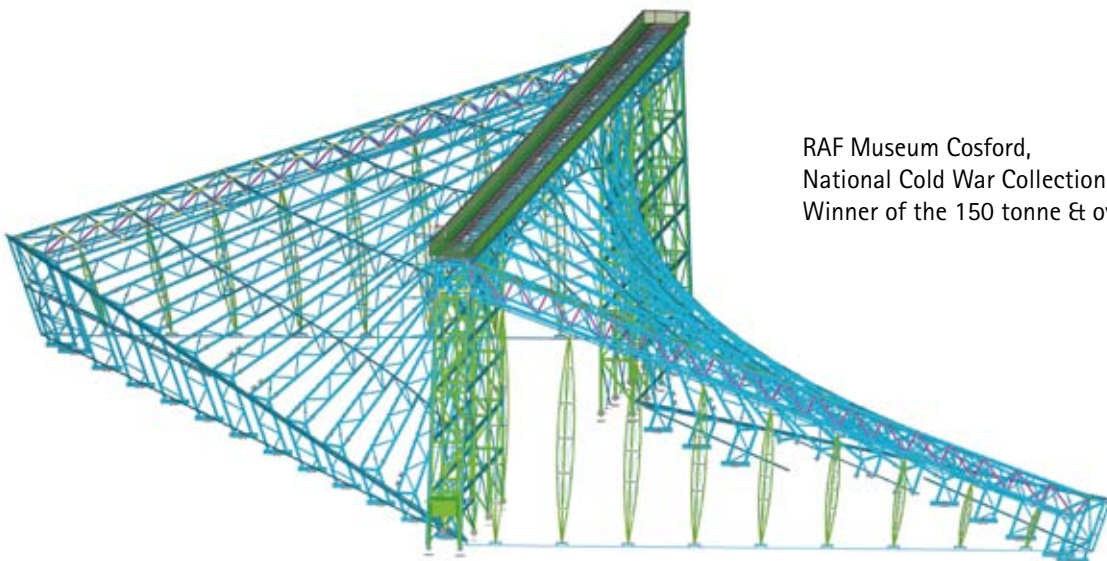
Company: SH Structures Limited

Winning entry: RAF Museum Cosford, National Cold War Collection / builds at 150 tonnes and over

SH Structures Limited specialise in the design, fabrication and erection of complex steel structures - particularly those involving a high proportion of structural hollow sections. The company are currently at the forefront of 3D modelling technology as a result of their proficient utilisation of Tekla Structures software.

SH Structures entered the Tekla UK Model Competition with their design submission for the RAF Museum in Cosford. The building houses a new exhibition area for the unique collection of Cold War aircraft and military equipment. The dramatic shape of the building is based upon hyperbolic parabola, which creates two triangular exhibition areas separated by a central spine wall. The smooth lines of the aluminium roof dominate the sculptural form of the exterior with the industrial aesthetic of the interior exposing a stark contrast.

As well as being designed for considerable wind loads, the structure also had to accommodate the additional load of a number of the aircraft being suspended from the steelwork.



RAF Museum Cosford,
National Cold War Collection
Winner of the 150 tonne & over category.

SH Structures used full collaborative properties, which allowed all project participants access to project information in real-time. Users were able to control the 3D geometry of the steelwork and hence the cladding through Tekla Structures. Approval of geometry was gained by the architect physically viewing the model, guaranteeing consistency between design intent and the actual model built at the construction site.

Model sharing capabilities allowed SH Structures to employ numerous technicians in various offices to work on the centrally stored model. The Tekla web viewer utility was significant in managing and communicating information throughout.

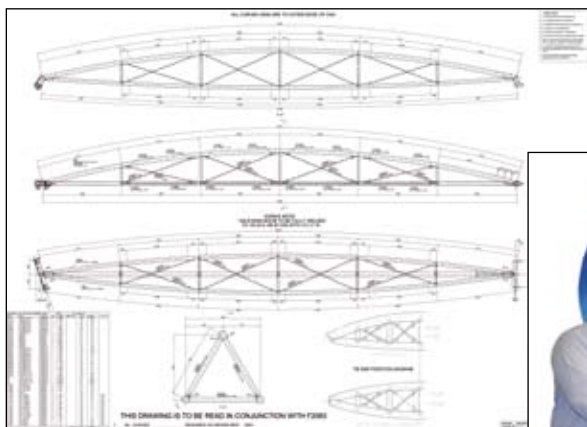
Tekla Structures provided a key additional benefit - determining the centre of gravity for intricate assemblies. This crucial information was used in the development of erections schemes to provide detailed plans for complex lifts, ensuring correct placement of difficult items thus reducing the risk to operatives working at height.

The contract value of this impressive project was £9 million.

SH Structures Limited
Moor Lane Trading Estate
Sherburn-In-Elmet
North Yorkshire
LS25 6ES

www.shstructures.com

Client: The Royal Air Force
Architect: Feilden Clegg Bradley
Consultant: Michael Barclay Partnership
Main Contractor: Galliford Try Limited



Tekla Structures drawing



Gary Longshaw presents trophy to a David Poole and Ian Mitchell.

Tekla Structures 3D software was used throughout the RAF Museum project from early development to on-site erection. The scope of the project was complex, totalling 700 tonnes of steelwork. A large proportion of that steelwork was used as the tubular roof structure.

The detailed Tekla model generated accurate shop and erection drawings and reports, ensuring error-free collaboration through each phase of production. During shop assembly, some 1360 unique brackets were fitted to the tubular rafters to provide a suitable fixing for the cladding system.



> Adey Steel *Under 150 tonnes*

Company: Adey Steel Limited

Winning entry: Trent Park Towers / builds under 150 tonnes

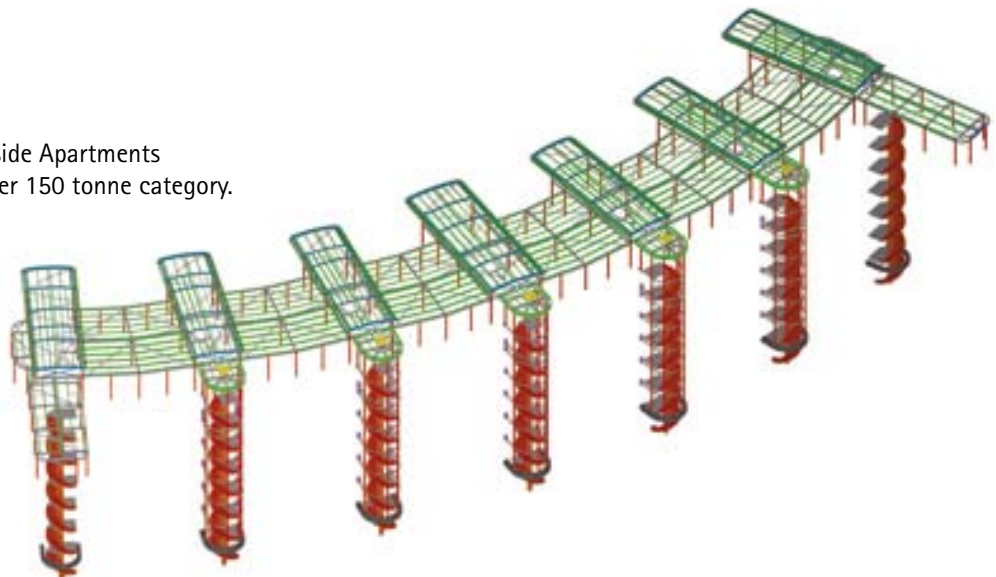
Adey Steel Limited, a subsidiary of Adey Holdings Limited, offer bespoke technical solutions to a wide range of structural steel and architectural metalwork applications. The company provide services from site survey through to design, project management, fabrication and site installation for the construction and engineering industries.

It is often the smaller models of more unusual structures which push the boundaries of Tekla Structures. The software has transformed how the company detail contracts and how they present and utilise data within the production environment. Adeys have definitely realised a reduction in both production times and site errors. The company now run 9 Tekla Structures licences within the business.

Adeys entered the Tekla UK Model Competition with its design submission for Trent Park Towers, a luxury riverside apartment block built alongside the River Trent close to the centre of Nottingham.

Although the building was primarily constructed using concrete, steelwork was utilised to create the complex roof structure for the lavish penthouse apartments, incorporating high level cantilevering curved roof sections coupled together by low level sloping roof sections around the faceted building. Adeys also supplied the glazing support for the decorative spiral stair towers which required support via architecturally curved visible hollow section towers.

Trent Park Towers,
Nottingham Riverside Apartments
Winner of the under 150 tonne category.





The Trent Park Towers project benefited greatly through Tekla Structures ability to model both the complex geometry and the other building materials within the structure, such as the concrete foundations and the concrete spiral staircases. The drawing clonefunction helped with the complicated drawings, and saved valuable draughting time. Being able to leverage data such as NC and lists downstream enabled Adeys to operate much more efficiently with error-free results.

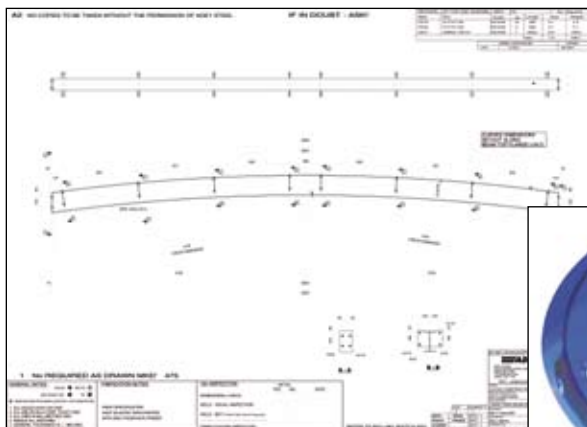
Adeys were able to get the client project team on board with approvals and co-ordination as a result of the Tekla Structures 3D detailing application, as they could present the structure and make changes in real time if necessary within a meeting. The ability to 'walk' the client or architect around the building made sign off much easier than presenting 2D drawings alone.

Tekla Web Viewer models proved indispensable whilst co-ordinating the complex areas of the project with the engineers, architects, and other trades. The viewer allowed the contract manager to display the model during site meetings and created a focal point whilst relaying progress information, as well as set out and design issues.

Adey Steel Limited
Falcon Industrial Park
Meadow Lane
Loughborough
LE11 1HL

www.adeysteel.co.uk

Main Contractor: Clegg Construction Ltd
Architect: Franklin Ellis Architects
Engineer: BWB Consulting Ltd



Tekla Structures drawing



Billy Walker and Michael Gibb, accepting trophy.

Tekla Structures harnessed the power to not only view, but to work with the model in a fully rendered 3D environment. The ability to cut clip planes through the view, and furthermore present members transparently facilitated project management. Altogether Adey found these functions very valuable and allowed the user visually to see where any welding and bolting access problems might occur, highlighting possible model clashes.

Adey Steel worked closely with the Main Contractor, Architect, Engineer and other disciplines (cladding and M&E) on this project. Tekla Structures helped to solidify the excellent working relationship.



> Odda Design *Multi-material*

Company: Odda Design Limited

Winning entry: Tree Top Walkway, Kew Botanical Gardens / multi-material segment

Odda Design Limited are a UK-based structural steelwork detailing office contracted by fabricators across the UK, Europe and South Africa. Odda creates all drawings using Tekla Structures 3D detailing software, of which the company holds 8 licences.

Odda entered the Tekla UK Model Competition with their design submission for the Tree Top Walkway at Royal Kew Botanical Gardens in London. The aerial walkway rises 18m above ground, transporting visitors through tree canopies for a birds-eye view of Kew. The design involves a 200m long looped arrangement of 12 modular walkway trusses, connected by 10 circular node platforms supported by triangular structural pylons, all fabricated from weathering steel. The Fibonacci mathematical sequence governs the geometric arrangement of structural members in the walkway trusses. A large platform at mid point of the walkway provides space for academic workshops.

The structure is fabricated from 300 tonnes of weathering steel with galvanised expanded mesh forming the floor and side infill panels. The hand railings are machined from wood supplied by the garden itself. Weathering steel was chosen as the principal material due to its low maintenance and attractive appearance. Since this steel is low alloy, it forms a rusted protective barrier against oxygen, moisture and contaminants.



Tree Top Walkway,
Kew Botanical Gardens
Winner of the multi-material category.



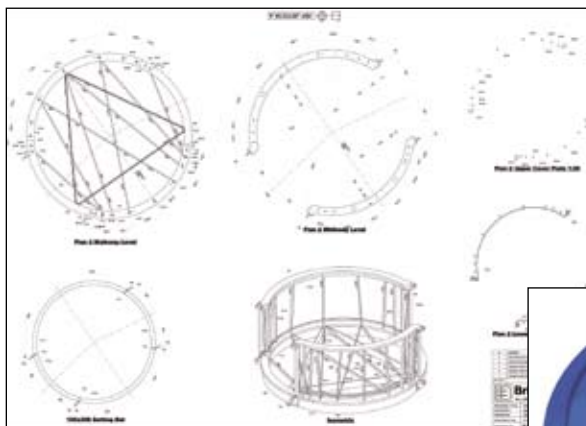
Through Tekla model-sharing capabilities, information management was enhanced. Odda worked closely with architects Marks Barfield and engineers Jane Wernicks Associates. The Tekla Structures multi-user and Web Viewer functions were used extensively to link all project participants. During the development stages, all parties would meet at the architect's office to review the model and fine-tune various design fixes. As the project developed, remote users were able to view and make required modifications to the model while in the field, exposing potential construction conflicts early on. Since the design form was complex, accurate detailing was vital for all elements to fit together before erection of the trusses.

The ability to leverage the Tekla model downstream facilitated integration with other disciplines. Odda used the model to synchronise all project data. Tree and tree root surveys as well as civils were imported directly to the central model. Pile locations were then established and subsequently passed on to the piling contractor.

Odda Design Limited
5 The Court Yard
Manor Road
Gravesend
Kent
DA12 1AA

www.odda.co.uk

Detailers: Odda Design Ltd
Client: Royal Botanical Gardens Kew
Main Contractor: WS Britland
Architects: Marks Barfield Architects
Engineers: Jane Wernick Associates



Tekla Structures drawing



Emily Brown presents trophy to Chris Hall.

Tekla Structures collaborative properties were highly beneficial in the export of NC data, with DSTV files for running drilling, cutting and profilers easily generated. Such advance planning and co-ordination guaranteed that equipment and fabrication deliveries arrived in the correct sequence.

The Tree Top Walkway opened May 2008.



> James Scott *Student model*

Student: James Scott

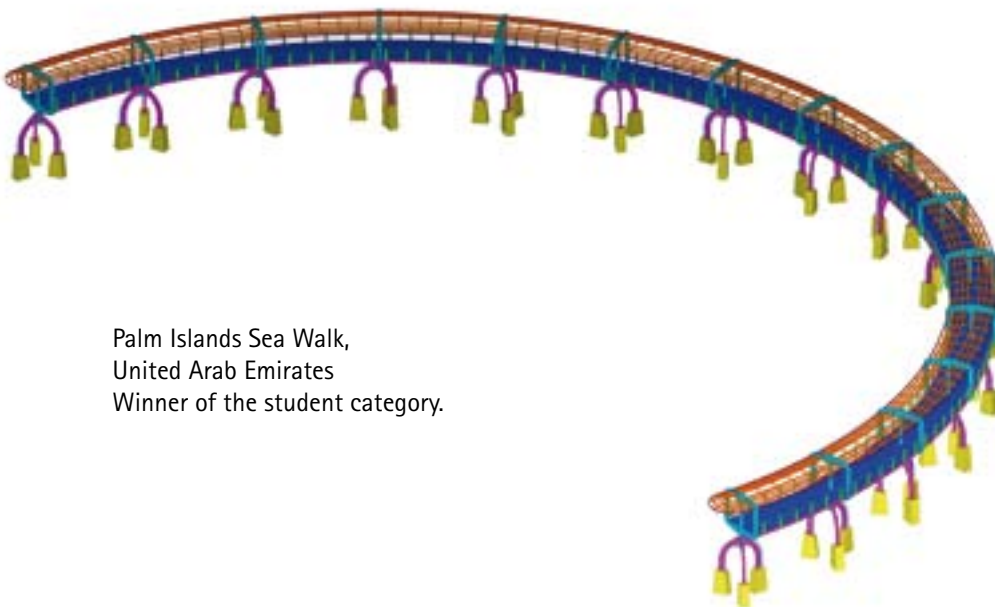
Winning entry: Palm Islands Sea Walk / student model

The submission under the student model segment for the Tekla UK Model Competition presented James Scott with a unique opportunity to highlight his innovative detailing talents. James entered the contest with a design brief for the Palm Islands Sea Walk as part of his Higher National Diploma/Certificate in Civil Engineering. James was the only Tekla Structures user on the course, so the complexity of entries varied.

The Palm Islands are three large man-made islands off the coast of the emirate of Dubai, in the United Arab Emirates. The sea walk structure is an off-shore walkway extended over the Gulf Sea, which leads to a Palm Islands restaurant development.

The walkway consists of 3 separate support modules (one for each end of the curve) and 14 identical modules evenly located through 180 degrees. The structure spans 100m in diameter and weighs approximately 500 tonnes.

For this project, design intent was led by artistic license based on semi-circular patterns. James' Tekla model contained 3260 individual parts forming 623 separate assemblies using 1777 connections and took around 14 days to detail.



Palm Islands Sea Walk,
United Arab Emirates
Winner of the student category.



Tekla develops and markets Tekla Structures software for model-based design of steel, concrete, and multi-material structures as well as for the management of fabrication and construction.

Tekla Structures 3D Building Information Modelling (BIM) software provides the best constructability on the market. Its ability to process extensive amounts of data enables accurately detailed and highly constructable 3D and 4D models that apply to every stage of design and construction and represent the 'as-built' condition of a building. Tekla Structures effectively integrates into any best-of-breed software driven collaborative workflow, which is the key to minimising errors and maximising efficiency, resulting in high profitability and on-time project completion. Tekla Structures encompasses specialised configurations for structural engineers, steel detailers and fabricators, precast concrete detailers and fabricators, as well as construction companies.



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