



## Schools receive a bundle of benefits from their Local Authority

In Dundee, secondary school students are mastering 3D design skills using Autodesk Inventor, the world's best-selling 3D modelling software, used by hundreds of thousands of engineers and design professionals.

For many UK schools, state-of-the-art CAD tools are a significant investment. But for the secondary schools served by Dundee City Council, Autodesk Inventor hasn't cost a penny. The Local Authority decided to fund the software centrally and purchase nine Inventor Professional bundles from one of Autodesk's Education resellers. Quality Improvement Officer, Kenny McKeown explains why:

"Where software has become a core element within the curriculum, Dundee City Council has made bulk purchases on behalf of the schools. This approach means that everyone is on the same platform, allowing the Authority to provide support in the form of training and development materials."

### Flexible licensing brings greater freedom

Autodesk has created three software bundles for secondary schools – Autodesk Inventor Professional, Autodesk Revit Series and Autodesk 3ds Max – all designed to provide a flexible package of standalone, network and student licences at a reduced price.

The Autodesk Inventor Professional bundle comprises over 120 licences, including a mix of network, standalone and student licences plus 4 extra teacher licences. Kenny McKeown explains how bundle licencing works:

"The licence software sits on a server and allows up to 40 users at any one time. Having student licences means that teachers can issue copies of Inventor for students to take home when they want to continue their design work outside school."

Harris Academy is one of the Dundee secondary schools to be given an Inventor bundle by the Local Authority. Principal Teacher of Guidance and Technology Teacher, Gordon Laidlaw uses the software to teach 3D design, modelling and rendering to students in years S1–S6:

"We've been using Inventor at Harris Academy for five or six years. In the past I've also worked in Pro/DESKTOP but I didn't find it as intuitive, so I was happy that the Local Authority chose Inventor.

"In my opinion, the main advantage of Inventor is its simplicity. I find the software easy to teach and students find it easy to use, particularly for 3D modelling. This is a key factor when you consider that we're using it 50% of the time."

## Giving students the edge in 3D

Kenny McKeown first saw Inventor in action in 2003, at an Autodesk promotional event. He quickly recognised the benefit of using Autodesk software to teach students how to design in 3D:

“The secondary school bundles reduce the cost of Inventor significantly and we wanted to give staff and students the facility to use something that’s industry standard – something that would give students the edge.”

Before the Council committed to buying Inventor, Kenny McKeown consulted technology staff at all the local secondary schools. He discovered that Autodesk software was also the teachers’ choice:

“After attending the promotional event we surveyed teachers from the technology departments of each school. Some of them had seen Inventor demonstrated at trade shows and presentations, and thought it was something that could take them a long way. They put forward a strong case for investing in Inventor, pointing out that you can get different types of software to fulfil different functions whereas with Inventor you have everything you need in one package.”

The teachers had certainly done their homework. Not only does Inventor Professional have a comprehensive range of 2D and 3D design tools, it also includes AutoCAD Mechanical for 2D drawing and detailing, Autodesk Vault for data management, ANSYS Finite Element Analysis software and IDF import functionality.

## Teachers take time out to learn

When Dundee City Council purchased seats of a previous version of Inventor in 2003, they took two days’ training for technology staff. This proved to be an effective way to help teachers get to grips with the software and feel confident enough to take their new skills into the classroom.

“The first training session was a general introduction to the software package,” says Kenny McKeown. “This was repeated the following year for staff who were unable to attend the first session. By the end of the second year, nearly all of the technology teachers had been trained and most of them went on to use Inventor in the classroom. Also, in between the official training days, staff were keen to show one another what they’d learned and take the software home to practice.”

Building on the success of the initial Inventor training, Dundee City Council now funds an annual two-day course designed to update and enhance Autodesk skills. Teachers can also use the curriculum CDs and manuals that come with Inventor Professional to help them plan lessons and fit the software within curriculum requirements.

Kenny McKeown explains how the training is tailored to suit teachers’ needs: “We ask the teachers what aspects of the software they would like to focus on. They look at the course outline and suggest specific areas in which they could do with training in order to help them show their students what to do.”

## From the race track to the real world

At Harris Academy, Autodesk Inventor Professional is not only used for coursework but also in a number of extracurricular activities. Each year, Gordon Laidlaw’s S5 and S6 students enter the F1 in Schools Challenge, a national competition open to all UK secondary schools, colleges and youth groups.



The challenge is to design and manufacture a CO<sub>2</sub>-powered Formula One racing car. The teams produce their designs in CAD software such as Inventor, including an orthographic projection of the car and a colour isometric drawing or 3D rendering of the final idea. Then they manufacture and test the car before competing in regional heats.

In 2005, the Harris Academy team won their regional heat and travelled to Birmingham to take part in the national final where they came second in the 16+ category. Gordon Laidlaw sees the F1 Challenge as a valuable experience, helping to prepare students for the many challenges that lie ahead:

“They will be up against stiff competition for university places, and even stiffer competition for graduate jobs in a demanding industry. The early introduction to Inventor gives our students a head start, arming them with up-to-date skills they can transfer to the world outside the classroom.”



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