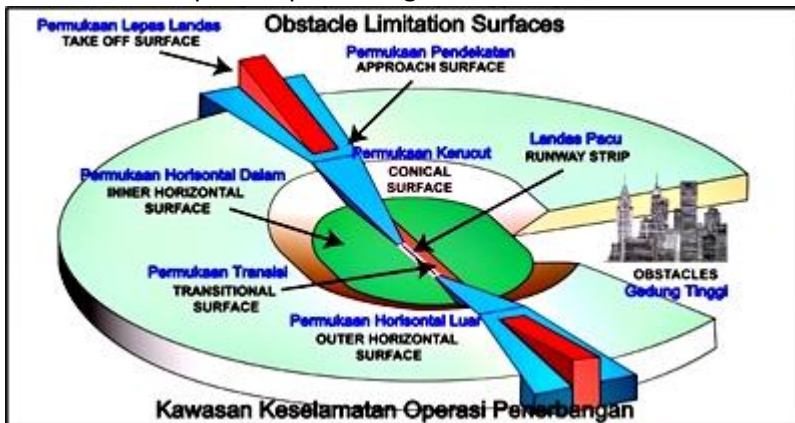




**apa redaksi:** tulisan di bawah ini merupakan sebuah terobosan bermuatan kemajuan teknologi dunia IT untuk keselamatan penerbangan. Halangan atau *obstacle* yang terjadi di sekitar bandar udara dapat muncul setiap saat, baik pada saat bandar udara itu baru direncanakan atau setelah beroperasi. Bangunan tinggi, halangan lain yang bergerak dan benda tumbuh disekitar daerah pendaratan dan lepas landas harus selalu diketahui secara pasti oleh pengelola untuk kepastian proses lepas landas dan pendaratan yang selamat. Kementerian Infrastruktur dan Lingkungan Kerajaan Belanda telah menginisiasi pembuatan sarana peta inter aktif melalui jaringan internet, untuk memudahkan para kontraktor dan pengembang yang akan membangun berbagai bangunan untuk bermacam kepentingan atau menara di sekitar kawasan keselamatan operasi penerbangan di sekitar bandar udara. Kawasan keselamatan operasi



penerbangan adalah seperti info grafis 3D di samping ini. **Obstacle Limitation Surfaces** ini di Indonesia dikenal merupakan bagian dari **Kawasan Keselamatan Operasi Penerbangan (KKOP)** dari sebuah bandar udara. Dengan adanya program inter aktif di Belanda tersebut diharapkan para kontraktor atau

pengembang dapat meningkatkan kepeduliannya terhadap keselamatan penerbangan terkait dengan rencana pembangunan yang akan dilakukannya. Selain menjadi halangan (*obstacles*), sebuah bangunan itupun harus dibangun dan didesain sebagai perlindungan bagi kepentingan penghuni dan pengguna dalam mengatasi masalah kebisingan yang berasal dari suara mesin pesawat. Kualitas peredam bangunan yang akan didirikan dan batas jarak horisontal serta ketinggian yang berada di kawasan yang diizinkan untuk sebuah bangunan, merupakan sebagian prasyarat yang harus dipatuhi sebelum mengajukan permohonan izin. Sarana inter aktif OLET ini sudah menghitung secara pasti jarak secara horisontal dan vertikal terhadap bangunan yang akan dibangun di wilayah kawasan tersebut. Penanaman pohon secara terkendali di sisi kawasan keselamatan oleh pengelola bandar

udara di banyak bandar udara di dunia, diyakini sebagai salah satu alat peredam kebisingan yang ampuh bagi masyarakat yang tinggal di sekitar kawasan keselamatan. Di banyak bandar udara yang sudah terlanjur dikelilingi oleh hunian, pengelola bandar udara “terpaksa” harus melakukan aturan terhadap maskapai dengan cara membatasi penerbangan (malam) yang dikenal dengan sebutan **curfew**. Selain itu prosedur operasi standar navigasi standar keberangkatan (**SID**) dan pendaratan (**STAR**) yang dibuat menjauhi ruang udara di atas kawasan hunian. Otoritas bandar udara juga membatasi operasional bandar udara terhadap jenis pesawat yang diperkenankan untuk beroperasi ke dan dari bandar udara itu disertai waktu operasionalnya. Seluruh perubahan bangunan dan benda bergerak (tumbuh) harus diketahui secara pasti oleh pengelola bandar udara dan kemudian harus dipublikasi secara berkala melalui informasi publikasi penerbangan (AIP) sebelum mulai diberlakukan. OLET membantu untuk menjawab masalah itu hanya secara one click away dan FoC. Selamat membaca bangsaku.....

## **OLET: A NEW TOOL TO ANALYSE OBSTACLE LIMITATION SURFACES**

Posted at 08:00h in Environment by Jonas van Straaten

Airports play an important role in the stimulation of economic growth of the cities in their catchment area. The other way around is equally true: economic growth will stimulate the demand for bigger airports. While the city grows, new high-rise developments can hinder the airport's safety and capacity. Aviation legislators respond by imposing stringent height restrictions on its surroundings. We have addressed this in a previous blogpost.

The permissible building height near airports is not always clear. Which limitations are applicable, how strict are they and what if a planned building penetrates an obstacle limitation surface? The first step is adequate insight in the situation at the proposed building site. To help aviation authorities, city planners and developers a new online tool is available: the Obstacle Limitation Evaluation Tool (OLET). This tool allows you to check the permissible height at a building site in a minute, and shows you which particular obstacle limitation surfaces are restricting the development. As of this week the first operational version of OLET is published online by the Dutch Ministry at [lib-schiphol.nl](http://lib-schiphol.nl). The site provides an interactive map showing all height restrictions and other land use restrictions related to the flight operations on Schiphol airport. OLET can automatically filter the relevant surfaces for a specific building site and list them in a downloadable report illustrated with maps.

### **WHY IS THE ANALYSIS OF OBSTACLE LIMITATION SURFACES SO COMPLICATED?**

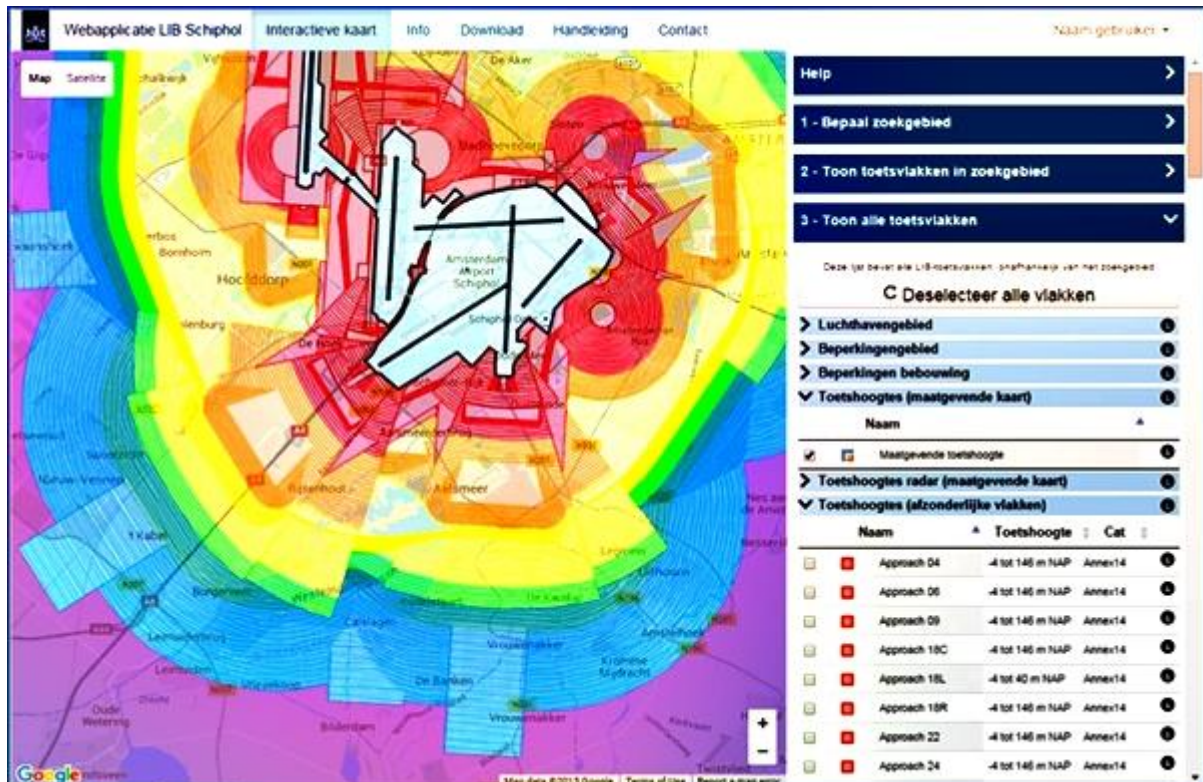
To adequately protect the airport's safety and capacity aviation authorities should publish maps that make it easy to find out how high you can build. This is not straight forward. There are dozens kinds of obstacle limitations surfaces to be considered: surfaces to protect general flight procedures as defined by ICAO Annex 14, surfaces to safe-guard specific flight procedures (based on PANS-OPS, ICAO Doc 8168) and surfaces meant to prevent constructions blocking the signals of communication, navigation and surveillance (CNS) systems (EUR Doc 015).

Because all these surfaces partially overlap, a proposed building site may be influenced by more than thirty obstacle limitation surfaces. As city planner or developer you don't want to check the heights of dozens of surfaces. You often just want to know the permissible building height at a specific site. To support this requirement the Dutch Ministry of Infrastructure and Environment asked To70 to develop

a map depicting the most limiting height restrictions around Amsterdam Airport Schiphol. To achieve this, more than one hundred obstacle limitation surfaces were constructed in 3D and combined.

Then the lowest surface parts were selected to construct one single obstacle limitation map showing the permissible building heights around the airport.

### EXAMPLE OF AN INTERACTIVE OBSTACLE LIMITATION MAP SURROUNDING AN AIRPORT, IN THIS CASE AMSTERDAM AIRPORT SCHIPHOL



A map like this is a good starting point. However, in some cases you just want to build higher than the limits shown on this map. Aviation authorities may be willing to investigate if this is possible, especially when they are convinced of the (economical) benefits of the envisaged plan. Such a study requires that all surfaces that would be penetrated are considered and all associated safety, capacity and operational aspects are analysed. The outcome of such an analysis is unsure, the decision isn't a simple statement based on fixed rules. Most surfaces are based on general assumptions and are not fine-tuned to the real (or current) situation. Small changes in flight procedures may provide valid arguments to raise the limitations. Due to this complexity and a limited capacity of experts, the procedures to apply for an exception can take a long time, without any prediction on the outcome.

### THE BENEFITS OF OLET

We are convinced that OLET can be of great value for city development around airports as it speeds up analysis and helps all parties to detect limitations and find potential solutions at an early stage of

the development. After all, nobody likes to see a project cancelled after spending a lot of time planning. Airport and city are in a symbiotic relationship, one cannot grow without the other and at the same time each partner has their own interests. With OLET potential conflicts are made visible. Accurate and easily accessible information streamlines procedures and supports the discussion between aviation authorities, city planners and developers.